BOND Implementation and Evaluation

Fourth-Year Snapshot of Earnings and Benefit Impacts for Stage 2

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Report Context

As part of the Ticket to Work and Work Incentives Improvement Act of 1999, Congress asked the Social Security Administration (SSA) to test alternative Social Security Disability Insurance (SSDI) work rules designed to increase the incentive for SSDI beneficiaries to work and reduce their reliance on benefits. In response, SSA has undertaken the Benefit Offset National Demonstration (BOND), a random assignment test of variants of SSDI program rules governing work and other supports. SSA, in conjunction with several contractors led by Abt Associates, developed the infrastructure and supports required to implement BOND.

The BOND project includes two stages. Stage 1 is designed to examine how a national benefit offset would affect earnings and program outcomes for the entire SSDI population. Stage 2 is designed to learn more about impacts for those most likely to use the offset (recruited and informed volunteers) and to determine the extent to which Enhanced Work Incentives Counseling (EWIC) affects impacts.

This report, the second of two Stage 2 *Snapshot Reports,* documents Stage 2 impacts on earnings and benefit outcomes during the fourth calendar year of implementation (2014). The Stage 2 sample of SSDI-only volunteers includes the offset-only group (T21), the offset-EWIC group (T22), and the Stage 2 control group (C2). The authors have conducted pairwise comparisons of outcomes for beneficiaries in these groups to provide estimates of the impact of the offset compared to current law (T21 vs. C2); the impact of the offset plus EWIC, again compared to current law (T22 vs. C2); and the marginal impact of EWIC once the offset is available to both groups (T22 vs. T21).

Future reports--Interim Process, Participation, and Impact Report in 2017 and the Final Report in 2017--will track Stage 2 impacts through 2015. A parallel series of reports is being produced for Stage 1.

Summary of Key Findings

The findings in this report concern the SSDI beneficiaries thought most likely to respond to the offset work incentives: volunteers who wished to have the offset rules applied to them and who did not initially receive Supplementary Security Income (SSI). The impact estimates show that:

- There is some confirmatory evidence that the offset rules combined with standard work incentives counseling (WIC) *increased SSDI benefits paid* compared to current law earnings rules and counseling services. For this policy comparison, there is also exploratory evidence (from non-confirmatory tests) of increases in the proportions of beneficiaries with any employment and with earnings above the BOND Yearly Amount (BYA), as well as an increase in the number of months with SSDI payments.

- There is some confirmatory evidence that the offset rules combined with enhanced work incentives counseling (EWIC) *increased SSDI benefits paid* when compared to current law. For this policy comparison, there is also exploratory evidence of increases in the proportion of beneficiaries with earnings above BYA, as well as an increase in the number of months with SSDI payments.

- When added to the offset, EWIC *did not have any detectable incremental effects on 2014 earnings and benefit outcomes* relative to WIC.

The BOND Evaluation Team

Abt Associates, in partnership with 25 other organizations, is implementing and evaluating the BOND under contract to the U.S. Social Security Administration. To ensure the objectivity of the evaluation, separate teams conduct the implementation and evaluation components of the project. The current report reflects exclusively the views of the evaluation team, led by Evaluation Co-Directors Stephen Bell of Abt Associates and David Stapleton of Mathematica Policy Research. These individuals have no role in implementing or overseeing the BOND intervention they are studying, nor do any members of their evaluation team. Separation of implementation and evaluation does not extend throughout the project, however. The Abt Project Director (Michelle Wood) and Principal Investigator (Howard Rolston) have joint responsibility for coordinating the implementation and evaluation efforts, including, respectively, managing the day-to-day operations of the project and overseeing the effective and efficient implementation of the BOND design. Within this structure, full authority over and responsibility for the content of all evaluation reports rests with the Evaluation Co-Directors.

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Acronyms Used in This Report

AEE	Annual Earnings Estimate
BODS	BOND Operations Data System
BOND	Benefit Offset National Demonstration
BYA	BOND Yearly Amount (equal to $12 \times$ the monthly SGA level)
DAC	Disabled Adult Child
DWB	Disabled Widow/Widowers Benefits
EWIC	Enhanced Work Incentives Counseling
GP	Grace Period
IRS	Internal Revenue Service
IRWE	Impairment Related Work Expenses
MEF	Master Earnings File
PHUS	Payment History Update system
SGA	Substantial Gainful Activity
SSA	Social Security Administration
SSDI	Social Security Disability Insurance
SSI	Supplemental Security Income
SSR	Supplemental Security Record
TWP	Trial Work Period
WIC	Work Incentives Counseling

Terminology

1. **Prospective BOND subjects:** beneficiaries in the pool eligible for potential assignment at Stage 1.

2. **Stage 2 solicitation pool:** SSDI-only beneficiaries to be recruited for Stage 2.

3. **Stage 2 volunteers:** those subjects who volunteer for Stage 2.

4. **BOND subjects:** beneficiaries assigned to any of the five BOND treatment or control groups, at either stage (see **Exhibit 2-3**). Terms for subjects in specific groups are as follows:

   a. **Treatment subjects:** All subjects offered the use of the benefit offset, including:

      i. **T1 subjects** or **Stage 1 treatment subjects:** Those offered the offset at Stage 1.

      ii. **Stage 2 treatment subjects:** Those offered the offset at Stage 2, including:

         (1) **T21 subjects** or **Stage 2 offset-only subjects:** Stage 2 volunteers offered the offset, but not offered enhanced work incentives counseling.

         (2) **T22 subjects** or **Stage 2 offset-EWIC subjects:** Stage 2 volunteers offered both the offset and enhanced work incentives counseling.

   b. **Control subjects:** Those whose benefits will continue to be determined by current law.

      i. **C1 subjects** or **Stage 1 control subjects:** Those assigned to the Stage 1 control group.

      ii. **C2 subjects** or **Stage 2 control subjects:** Stage 2 volunteers assigned to the Stage 2 control group.

5. **BOND users:** those treatment subjects who take up a BOND treatment. These include:

   a. **Offset-only users** – all treatment subjects who have their benefits reduced by the offset but *do not use EWIC*, either because EWIC is not offered or because they choose not to avail themselves of it.

   b. **EWIC-only users** – all treatment subjects who use EWIC services *but do not have their benefits reduced by the offset*, because their earnings never rise high enough to use it. They can only be subjects in the T22 group.

   c. **Offset - EWIC users** – All treatment subjects who use EWIC services *and have their benefits reduced by the offset.* They can only be subjects in the T22 group.

   d. **Offset users** – the combination of offset-only and offset-EWIC users.

   e. **EWIC users** – the combination of EWIC-only and offset-EWIC users.

1.   Introduction

The Benefit Offset National Demonstration (BOND) is a random assignment demonstration that tests a variant of Social Security Disability Insurance (SSDI) program rules governing work and other supports. This Snapshot Report concerns Stage 2 of BOND, which was designed to learn about the impacts of the benefit offset for those most likely to use it, and to determine the marginal effects of the delivery of more intensive counseling services than those offered under current law. This report is the second of two *Stage 2 Snapshot Reports* about these innovations' impacts on earnings and benefits paid, and focuses on administrative earnings and benefits data for 2014. This introductory chapter describes the benefit offset and Stage 2 of the demonstration, explains the purpose of this report, and ends with an outline of the remainder of the report.

1.1.   Current SSDI Rules and the BOND Innovation

Under current program rules, SSDI beneficiaries lose all SSDI benefits after a sustained period of substantial earnings and risk potential loss of other (non-SSDI) benefits.[1] Specifically, benefits are lost if an SSDI beneficiary's countable monthly earnings exceed the monthly Substantial Gainful Activity (SGA) amount after completing a nine-month Trial Work Period (TWP) and a three-month Grace Period (GP). In 2014, the SGA amount was $1,070 per month for non-blind beneficiaries and $1,800 per month for blind beneficiaries. The complete loss of benefits for earnings in excess of the SGA amount is sometimes called the "cash cliff." The cash cliff likely discourages some beneficiaries from working at all and encourages those who do work to keep their earnings below the SGA level.

BOND replaces the cash cliff with a "ramp" (i.e., the benefit offset) with the policy objective of encouraging beneficiaries to increase their earnings and reduce their reliance on benefits.[2] The benefit offset is expected to increase the earnings of those who might otherwise not work at all and those who already work but might not attempt to earn more than the SGA amount. Those who engage in SGA under current law eventually lose their benefits entirely, whereas under the benefit offset many, perhaps most, might be eligible for a reduced SSDI benefit. While still on the ramp—i.e., while earning above the SGA amount but less than the zero-benefit amount at the end of the ramp—some beneficiaries may choose to increase the size of their benefits by working at less than their full earnings potential.

Theory predicts that the offset will have 1) a positive average effect on earnings for those who do not engage in SGA under current law and 2) a negative average effect on earnings for those who do engage in SGA under current law. In order for the offset to generate a net increase in average earnings, the former effect would have to be large enough to dominate the later effect.

Similarly, theory predicts that the offset will have 1) a negative average effect on benefits for those who do not engage in SGA under current law and 2) a positive average effect on benefits for those who do

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[1]   Other benefits include Medicare for those on the rolls for at least 24 months, and which are extended for a lengthy period following suspension of SSDI benefits, but not indefinitely. Some beneficiaries also receive Supplemental Security Income, Medicaid, or a variety of other public or private benefits that are contingent on earnings in some fashion.

[2]   See Exhibit 1-1 of the *Stage 2 Early Assessment Report* (Gubits et al. 2013) for a detailed comparison of current SSDI program rules with BOND rules related to work.

engage in SGA under current law. In order to generate a reduction in benefits paid across the whole sample, the former effect would have to be large enough to dominate the latter effect.

Differences between the administration of the benefit offset and the administration of current law benefits may also contribute to impacts, especially the impact on benefits. One of these differences is that BOND uses an annual accounting period, rather than the monthly period used under current law. SSA continues to pay benefits monthly, but the monthly payment amount is initially based on an estimate of calendar-year earnings.[3] The benefit offset reduces benefits by $1 for every $2 in countable annual earnings in excess of the BOND Yearly Amount (BYA). BYA is equal to 12 times the monthly SGA amount. In 2014, BYA was $12,840 for non-blind and $21,600 for blind subjects. The change to an annual accounting period was designed to reduce the cost of administering the offset. It can also be helpful to beneficiaries who have variable monthly earnings, in particular by possibly increasing benefits paid in (and for) a given year. Under monthly accounting, earnings above SGA in any month reduce benefits for that month, but under annual accounting the benefit reduction for those same earnings might be smaller or zero because of earnings below the SGA amount in other months of the same year.

1.2.   BOND Stage 2 Implementation and Random Assignment

To support rigorous estimation of the impacts of offering the benefit offset to the SSDI beneficiary population, the design of BOND has two components, referred to as "Stage 1" and "Stage 2". Stage 1 was designed to examine how a national benefit offset and accompanying administrative changes would affect earnings and program outcomes for the entire SSDI population nationally. Stage 2 was designed to learn more about the impacts of the benefit offset for those most likely to use it (recruited and informed volunteers from those SSDI beneficiaries not also receiving SSI) and to determine the extent to which significant enhancements to the basic BOND-focused work incentives counseling affect offset utilization and impacts. Stage 2 compares enhanced work incentives counseling (EWIC) to work incentives counseling (WIC) that is tailored to the benefit offset but are otherwise intended to be comparable to counseling services available to all beneficiaries under current law.

BOND takes place in 10 large sites, each corresponding to the service area of one of 53 SSA Area Offices. The 10 sites are a random sample of the 53 candidate areas to ensure that the evaluation's findings are nationally representative. Eligible beneficiaries in those sites were first assigned at random to a Stage 1 offset-only treatment group, a Stage 1 control group, or a pool to be solicited as volunteers for Stage 2.[4] Of those beneficiaries who were solicited to participate in the Stage 2 study, about 5 percent volunteered for the study.[5] Those who volunteered were then randomly assigned to one of the three groups:

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[3]   If later reconciliation reveals a deviation between estimated and actual earnings of more than $200, SSA will make a benefits adjustment. Beneficiaries may submit revised earnings estimates during the year if their income deviates from their initial estimates.

[4]   The Stage 1 impact analysis compares outcomes of the Stage 1 treatment group with outcomes of the Stage 1 control group.

[5]   The Stage 2 outreach is described in detail in the *Stage 2 Early Assessment Report* (Gubits et al. 2013). Initial recruitment waves yielded 7 percent who volunteered. Later recruitment efforts were truncated due to sufficient sample sizes, and thus had lower volunteer rates.

- **T21 subjects** (Stage 2 offset-only subjects): a group that receives the $1 for $2 benefit offset with Work Incentives Counseling (WIC) ;

- **T22 subjects** (Stage 2 offset-EWIC subjects): a group that receives the $1 for $2 benefit offset with Enhanced Work Incentives Counseling (EWIC)[6]; or

- **C2 subjects** (Stage 2 control subjects): a control group that is not offered the offset or EWIC and is subject to current law.

Random assignment for Stage 2 occurred between March 1, 2011 and September 28, 2012, with 40 percent of volunteers enrolling in the study in 2011 and 60 percent of volunteers enrolling in 2012. In total, 12,954 beneficiaries were randomly assigned to the three groups. The random assignment ratio for the three assignment groups was 8:5:8; ultimately, 4,935 volunteers were assigned to the T21 group, 3,089 volunteers were assigned to the T22 group, and 4,930 volunteers were assigned to the C2 group.

The impact analysis for Stage 2 addresses three research questions via three pairwise comparisons:

Research Question		**Addressed by Comparison of**
A.	What is the ***impact of the benefit offset on outcomes for SSDI-only beneficiaries who volunteer for BOND***, compared to current law?	T21 to C2
B.	What is the ***impact of the benefit offset plus enhanced work incentives counseling on outcomes for*** SSDI-only beneficiaries who volunteer for BOND, compared to current law?	T22 to C2
C.	What is the ***incremental effect of enhanced work incentives counseling on outcomes when added to the benefit offset***, for SSDI-only beneficiaries who volunteer for BOND?	T22 to T21

In addition to the benefit offset, WIC and EWIC, and the change to an annual accounting period, some differences in how SSDI is administered under BOND (relative to conventional SSA procedures) might influence impact estimates for the first two research questions. The administrative procedures established to provide T21 and T22 subjects with information and to implement benefit adjustments under the offset determine the speed with which retroactive payment adjustments are made and improper past payments are recovered. Because of how they are measured, these adjustments are especially important for the estimated impacts on benefits paid. By necessity, the impact estimates in this document focus on benefits paid *in* 2014. Impacts on benefits paid *for* 2014, which are not observed in the data available for this report, might be quite different after all retroactive benefit adjustments and repayments of improper payments have been completed. In the final report, we plan to include estimates of the impact of BOND on benefits paid *for* the years in the evaluation period.

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[6] The primary difference between EWIC and WIC is that EWIC staff take a proactive approach to contacting beneficiaries on an on-going basis to inform them about demonstration services. The more intensive components of EWIC services include counselor outreach to routinely contact the beneficiary, the development of a detailed employment support plan based on assessments of vocational skills and interests, and assistance in helping beneficiaries obtain the resources and support they need to find employment, as well as the ongoing support they need to keep it.

1.3.   Purpose

This *Snapshot Report* presents estimates for the three Stage 2 pairwise impact comparisons in the fourth year of the demonstration.[7] The report refers to differences in T21 vs. C2 outcomes as *benefit offset impacts*, to T22 vs. C2 differences as *benefit offset plus EWIC impacts*, and to T22 vs. T21 differences as *EWIC vs. WIC impacts*.

This second *Stage 2 Snapshot Report* uses the identical evaluation framework used in the *2015 Stage 2 Interim Process, Participation, and Impact Report* (Gubits et al. 2017).[8] Within that framework, the two most important evaluation outcomes—referred to as *confirmatory outcomes*—are total earnings and total SSDI benefits paid. In keeping with those designations, impacts on mean earnings in 2014 and mean benefits paid *in* 2014 serve as the confirmatory findings in this report. Hence, statistically significant findings for the confirmatory outcomes in this report should be interpreted as confirming that the benefit offset had an impact on at least one of two outcomes: 2014 earnings and/or SSDI benefits paid *in* 2014. The final impact evaluation will use a measure of benefits paid *for* the years in the evaluation period as a confirmatory outcome. Benefits paid for a given year in the evaluation period is more important for policy purposes than benefits paid in that year. However, benefits paid for data are only available with a lag and are not currently available for 2014.[9]

The report also presents exploratory impact findings for other beneficiary outcomes related to 2014 earnings and benefits paid in 2014. Significant findings for these outcomes cannot *confirm* that the benefit offset or EWIC had impacts; they can only suggest where such effects might have occurred. These estimates provide more information on the potential impacts of the benefit offset and EWIC, but receive less weight than the confirmatory findings in assessing the overall success of the tested treatments.

1.4.   Organization of the Report

The remainder of this report consists of three chapters. Chapter 2 provides background information on the impact estimation methodology and descriptive findings that provide context for the impact estimates. Chapter 3 presents the impact findings for the confirmatory and exploratory outcomes. Chapter 4 includes a brief discussion of the results and their implications.

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[7]   Previous reports described the BOND design, the framework for estimating the impacts, the early Stage 2 implementation activities, first and second year impacts, and third year impacts reported along with third and fourth year implementation activities (Stapleton et al. 2010; Bell et al. 2011; Gubits et al. 2013; Gubits et al 2014; Gubits et al 2017). A series of parallel reports documents results for Stage 1 of the demonstration.

[8]   Appendix A of the *2015 Stage 2 Interim Process, Participation, and Impact Report* (Gubits et al. 2017) provides full details of the methodology.

[9]   Bell et al. (2011) identify benefits paid as the confirmatory measure and indicate only the difference between benefits paid *in* a period versus *for* a period in a footnote (footnote 40). It became apparent during the preparation of the second Stage 1 Snapshot Report (Stapleton et al. 2014) and the first Stage 2 Interim Report (Gubits et al. 2017) that the difference between these two measures might be quite large.

2.   Methodology and Context

The goals for the Stage 2 evaluation are to learn about the impacts of the benefit offset for those most likely to use it (recruited and informed volunteers) and to determine the extent to which significant enhancements to the basic BOND-focused work incentives counseling affect offset utilization and impacts. For practical reasons, the design restricted the beneficiaries in Stage 2 to those most likely to use the offset. Specifically, attainment of the Stage 2 objectives requires more intensive data collection and more complex service delivery than is required for Stage 1. Restricting Stage 2 eligibility to those most likely to use the benefit offset reduces the sample sizes required for Stage 2 groups from tens of thousands to thousands.

Two aspects of this strategy for selecting the sample ensured that Stage 2 subjects would be likely to use the offset. First, concurrent beneficiaries—i.e., those receiving both SSDI and SSI—were excluded from Stage 2. The interaction between SSI and SSDI substantially diminishes the value of the SSDI offset to concurrent beneficiaries, so it was expected that relatively few would use the SSDI offset. Second, in contrast to the Stage 1 sample (which is randomly selected from all eligible SSDI beneficiaries), the Stage 2 sample is composed of self-selected volunteers from randomly selected eligible SSDI-only beneficiaries. It is presumed that interest in using the offset led to the decision to volunteer for the study, and that this interest means that Stage 2 subjects will be more likely to use the offset than the average Stage 1 subject.[10]

For this report, administrative data for calculating earnings and benefit impacts were available through calendar year 2014. Earnings are measured from the SSA Master Earnings File (MEF), which contains longitudinal information on wages (from employer W-2 forms) and self-employment income (as reported to the IRS). The MEF records were almost 100 percent complete for calendar year 2014 when SSA extracted them for this report.[11] Benefit outcomes are measured from SSA's Payment History Update System (PHUS) for SSDI and the Supplemental Security Record (SSR), for SSI.

The remainder of this chapter describes our methodological approach to estimating benefit offset impacts. We initially specified the methodology and outcomes for the impact analysis in Bell et al. (2011). This methodology was later refined for the *First-Year Stage 1 Snapshot Report* (Stapleton et al. 2013), and again in the *Stage 2 Interim Process, Participation, and Impact Report* (Gubits et al. 2017). The impacts we report are generalizable to the national population of SSDI beneficiaries not currently receiving SSI who would volunteer for this study if given the opportunity. We review the outcome definitions, anticipated impacts, estimation methodology, and analysis sample below.

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[10]   A comparison of 2011 employment rates between the Stage 1 and Stage 2 samples shows that about 16 percent of Stage 1 subjects had at least some earnings in 2011, compared to about 37 percent of Stage 2 subjects.

[11]   Because the data are collected by the IRS and are therefore subject to IRS access rules, SSA staff have direct access to MEF data, but contractors do not. Consequently, qualified SSA staff accessed the data, submitted programs developed by the BOND Evaluation Team to estimate impacts, reviewed output to ensure that it complied with privacy requirements, and then transmitted the output to the evaluation team. The MEF earnings data are updated annually. The 2014 earnings data for this report were extracted in June 2016.

2.1.   Outcome Definitions and Theoretical Impacts

The nine outcomes for which this document reports estimates of impact include two confirmatory outcomes (total earnings in 2014 and total SSDI benefits paid in 2014) and seven exploratory outcomes (related to 2014 employment and benefits). The exploratory earnings outcomes include indicators for earnings in excess of each of three annual earnings thresholds defined by multiples of BYA (one, two, and three times BYA) and an indicator for any employment during 2014 (defined as any earnings in 2014). The exploratory benefit outcomes include number of months with SSDI payments, total SSI benefits paid, and number of months with SSI payments[12]—each in 2014.

The administrative earnings measures include only "Social Security earnings." Social Security earnings are earnings that are taxable for Social Security purposes. About 6 percent of the U.S. workforce holds jobs not covered by Social Security taxes. Furthermore, Social Security earnings are capped at a maximum taxable amount, $117,000 for 2014. In 2014, 0.03 percent (three one-hundredths of a percent) of all Stage 2 subjects had earnings at or above $117,000. Beneficiaries who are earning at or above that amount are unlikely to have a behavioral response to the offset. Non-covered jobs constitute a larger omission. Appendix A.1 discusses these data and their limitations. Measures of earnings and employment taken from survey data should not be subject to the same source of bias, and are available in future reports as well as the *Stage 2 Interim Process, Participation, and Impact Report* (Gubits et al. 2017).

In the discussion that follows, we consider the expected direction of benefit offset impacts on these outcomes, abstracting from administrative factors that could themselves influence the impacts. Exhibit 2-1 summarizes the expected direction of benefit offset impacts on each of the outcomes. We then turn to a discussion of administrative factors and their potential influence on impacts.

Although BOND was designed to test whether eliminating the SGA cash cliff and replacing it with the $1 for $2 offset ramp would increase return to work and earnings, and reduce beneficiary's reliance on SSDI benefits, the theoretical direction of impacts of the benefit offset on mean earnings and benefits is ambiguous (third column of Exhibit 2-1). As described in detail in Bell et al. (2011), this ambiguity arises because the incentives created by the benefit offset vary with what the beneficiary's earnings would be under current law. T21 and T22 subjects who would have had no earnings or earnings below BYA under current law are expected, on average, to have higher earnings and lower SSDI benefits under the benefit offset. Conversely, some T21 and T22 subjects who would have had earnings well above BYA under current law are expected to have lower mean earnings and higher mean SSDI benefits under the benefit offset.[13] Positive impacts on the mean earnings for all beneficiaries require that positive impacts for those whose earnings would be less than BYA under current law are sufficiently large to offset possible negative impacts for those who would earn more than BYA under current law.

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[12]   Although eligibility criteria for Stage 2 required that beneficiaries not be receiving SSI benefits at the time eligibility was determined (in the first six months of 2011), Stage 2 subjects could potentially become SSI recipients (for example, after spending down their assets enough to meet the resource test). Therefore, SSI benefits are included as an outcome variable.

[13]   Empirically, there is evidence that some high-earning beneficiaries will reduce their earnings, but not reduce employment. Weathers and Hemmeter (2011) found evidence of a reduction in earnings by beneficiaries earning above SGA before random assignment in the Benefit Offset Pilot Demonstration.

Similarly, the predicted impact on benefits depends on what the earnings of the beneficiary would have been under current law. For those with no earnings or earnings below BYA, the predicted impact on benefits is negative; if these individuals earn more than BYA under the offset, their benefits will fall. Conversely, for those who would have had earnings above BYA under current law, benefits for many under the offset are expected to be higher because they will be eligible for a partial benefit rather than no benefit at all, as under current law. Hence, to generate a reduction in mean benefits paid, the reduction in benefits paid to those whose earnings would be less than BYA under current law must exceed the increase in benefits paid to those who would earn more than BYA under current law.

While ambiguous regarding the confirmatory outcomes, theory does predict the signs of the impacts for five of the seven exploratory outcomes (see Exhibit 2-1). Theory predicts positive impacts on employment, on the percentage of beneficiaries with earnings above BYA, and on months with SSDI payments. These predictions can be verified by separately considering the impacts for those whose earnings would be below or above BYA under current law. As indicated earlier, for those who would have earnings below BYA under current law, theory predicts that the offset will increase both the percentage employed and the percentage of beneficiaries with earnings above BYA. Those who would have earnings above BYA under current law will have a stronger incentive remain employed and to keep their earnings above BYA under the offset than they do under current law—even though some might work and earn less under the offset. It is not possible to predict the direction of impacts on the percentage with earnings well above BYA (for example, two and three times BYA); however, it is expected that some T21 and T22 subjects whose earnings would be well above BYA under current law will reduce their earnings in response to the benefit offset.

Theory also predicts that the impact on SSI benefits paid will be negative. The offset might have an impact on SSI payments to T21 and T22 subjects who are SSDI-only beneficiaries at the outset of the demonstration and whose SSDI benefits are below the maximum federal SSI benefit amount. Under current law, some such subjects are likely to enter SSI after they spend down their assets to the point at which they satisfy the SSI resource test. Higher earnings under the offset might reduce or slow the entry of such SSDI-only subjects into SSI.[14]

2.2.   Administrative Features of the Offset That Could Influence Impacts

The previous discussion abstracts from the administrative features of the benefit offset that were designed and implemented to facilitate use of the offset by T21 and T22 beneficiaries. As described in Bell et al. (2011), because these processes are necessarily different from current law processes, they are part of the T21 and T22 interventions being tested under BOND.

In the first years of BOND, the administrative factors most likely to affect outcomes concerned those leading to the adjustment of benefits—the special processes implemented for T21 and T22 subjects and the current processes that apply to C2 subjects. For T21 and T22 subjects, that process started shortly after enrollment into the study, when they were informed of their random assignment status. Some of those eligible to use the offset informed the demonstration of their work activity as recommended and their benefits were eventually adjusted via an administrative process set up for that purpose. Others eligible to use the offset early did not contact the demonstration, however. Instead, SSA discovered their

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[14]   See Riley and Rupp (2012).

high earnings in its annual review of earnings amounts on the Master Earnings File, and then initiated the process to adjust their benefits.

The benefit adjustment processes have an important implication for the benefits measures used in this report. These measures are based on benefits paid *in* 2014, rather than benefits paid *for* 2014, which would include all future retroactive adjustments for 2014 benefits. These two measures will diverge according to the dollar value of retroactive adjustments made for 2014 benefits. Although this dollar value is not yet known, we know that there must be retroactive adjustments of some dollar amount for the treatment subjects who did not pro-actively inform SSA of earnings above BYA. The BOND administrative data show that 33 percent of T21 subjects and 27 percent of T22 subjects eligible to use the offset by the end of 2014 (identified as of January 2017) did not have a benefit adjustment until after 2014. This implies that some adjustments to benefits paid to T21 and T22 subjects for 2014 are not reflected in benefits paid *in* 2014, and that there will be at least some discrepancy between benefits paid *in* 2014 and benefits paid *for* 2014.

The direction and size of the impacts of this administrative factor depend on how the processes for the T21 and T22 groups compare to the corresponding processes for C2 subjects. The most obvious difference is that T21 and T22 subjects had to be notified about a change in the earnings rules before the benefit adjustment process could start, whereas C2 subjects were subject to rules that had been in place for many years. Also, T21 and T22 administrative processes had not been previously implemented in a large scale, resulting in start-up delays[15], whereas the C1 processes have been in place for many years.

Exhibit 2-1.   Definitions of Confirmatory and Exploratory Outcomes and Predicted Signs of Impacts

	Definition	Predicted Sign
Confirmatory Outcomes		
Total earnings in 2014	2014 Social Security earnings	?
Total SSDI benefits paid in 2014	Sum of SSDI benefit payments from January through December 2014; for SSDI workers, this includes benefits for dependent spouses and minor children, but not for DAC[a]; for DAC and DWB, it includes only benefits payable to the DAC or DWB	?
Exploratory Outcomes		
Earnings Outcomes (January–December 2014)[b]		
Employment in 2014	Indicator for any 2014 Social Security earnings	+
Earnings above BYA	Indicator for 2014 Social Security earnings greater than or equal to $12,840 (non-blind subjects) or $20,600 (blind subjects)	+
Earnings above 2 × BYA	Indicator for 2014 Social Security earnings greater than or equal to $25,580 (non-blind subjects) or $41,200 (blind subjects)	?
Earnings above 3 × BYA	Indicator for 2014 Social Security earnings greater than or equal to $38,520 (non-blind subjects) or $61,800 (blind subjects)	?

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[15]   This issue is described in Gubits et al. (2013) and Derr et al. (2015).

	Definition	**Predicted Sign**
Benefit Outcomes (January–December 2014)		
Number of months with SSDI payments	Number of months in 2014 with SSDI benefits paid above zero	+
Total SSI benefits paid	Sum of SSI benefit payment amounts from January through December 2014	–
Number of months with SSI payments	Number of months in 2014 with SSI benefits paid above zero	–

Notes: Bell et al. (2011) provide detailed discussion on the hypothesized impacts of benefit offset.

[a] For a description of family benefits, see https://www.ssa.gov/pubs/EN-05-10024.pdf; accessed May 27, 2014.

[b] Earnings relative to BYA is based on earnings reported in the MEF.

One other administrative factor—the change from monthly to annual accounting—may have a positive impact on benefits paid *for* 2014, and possibly on benefits paid *in* 2014, but an ambiguous impact on 2014 earnings. The purpose of this change was to simplify administration of the offset and to simulate the expected future accounting procedure should the benefit offset become national policy. While not the purpose of this change, the move to an annual accounting period is expected to help beneficiaries with highly variable earnings (for example, seasonal workers) to a significant degree. Under monthly accounting, earnings above SGA in any month reduce benefits for that month, but under annual accounting the benefit reduction for those same earnings might be smaller or zero because of earnings below the SGA amount in other months of the same year. Holding earnings constant, this administrative change is expected to increase the benefits paid to some beneficiaries; any increase in earnings due to this factor will reduce benefits (and correspondingly, any decrease in earnings will increase benefits). The theoretical sign of the impact of this administrative change on earnings is ambiguous.

2.3. Impact Estimation Methodology

SSA included Stage 2 in the demonstration in order to provide information about the impact of the benefit offset on beneficiaries who volunteer for the study and about the impact of EWIC vs. WIC. Given the self-selected nature of the Stage 2 sample, the impacts from Stage 2 do not generalize to the national SSDI caseload or to any easily identifiable subpopulation. Conceptually, the Stage 2 impacts generalize to the national pool of SSDI-only beneficiaries who would have volunteered for the Stage 2 benefit offset "offer" had they been solicited.

To estimate impacts, we compare mean outcomes for the T21, T22, and C2 groups to each other. The mean outcomes are weighted for differences in site-selection probabilities and in sampling rates into the solicitation pool across sampling strata. The means are adjusted for the effects of small random differences in baseline characteristics.[16] The adjustments for differences in baseline characteristics also serve to reduce the standard errors of the impact estimates. For each specific outcome, we test the null hypothesis of no impact. For each hypothesis test, we indicate statistical significance at the 10-, 5-, and 1-percent significance levels. For example, a 10 percent significance level means that if the null hypothesis is true, there is only a 10 percent chance that the test will mistakenly reject it.

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[16] See the *Stage 2 Interim Process, Participation, and Impact Report* (Gubits et al. 2017) for a full description of the estimation model and the construction of analysis weights.

The impact estimates are "intent to treat" estimates. For example, the benefit offset impacts capture the mean impact of the applicability of the benefit offset rules to the earnings of all T21 subjects, whether or not those subjects work and use the offset. Likewise, the benefit offset plus EWIC impacts capture the impact on all T22 subjects, whether or not they work and use the offset. Hence, the impact estimates reflect "no impacts" for those treatment subjects who would not have any earnings under current law or the offset.

The Stage 2 impact analysis has a total of six confirmatory hypothesis tests: tests of impacts on the two confirmatory outcomes in each of the three pairwise comparisons. We group the four tests in the T21 vs. C2 and T22 vs. C2 comparisons together because they both involve impacts of the benefit offset. We perform a multiple comparison procedure on these four tests together to adjust the p-values of the tests. We perform a separate multiple comparison procedure to adjust the p-values of the two confirmatory tests in the T22 vs. T21 comparison. These adjustments are necessary because we are performing multiple hypothesis tests, making the probability of at least one Type I error (rejecting a true null hypothesis) larger than the significance level for the individual tests. To compensate for this effect, we adjust the test statistics for the confirmatory tests so that the probability of rejecting the null hypothesis of no impact within the "family" of tests (i.e., either within the four tests of T21 vs. C2 and T22 vs. C2 or within the two tests of T22 vs. T21) is equal to the specified significance level if the null hypothesis of no impact on any outcome in the tested group is true.[17]

We make no multiple comparison adjustment to the tests for exploratory outcomes. Readers are advised to give less evidentiary weight to any individually significant result from an exploratory test than they would to an equally significant result from a confirmatory test.

We estimate impacts for the full Stage 2 assignment groups and for subgroups defined by duration of SSDI benefit receipt at the point of solicitation into the demonstration.[18] The duration subgroups are of interest because prior research and program rules suggest that subjects who have been on the rolls for a *short duration* (defined here as three years or less) may respond to the benefit offset differently from those who have been on the rolls for a *long duration* (more than three years). More specifically, we expect more short-duration subjects to work in comparison to long-duration subjects. However, we expect it will take longer for short-duration subjects to actually have their benefits adjusted, because they will have completed fewer TWP and GP months at the outset of the demonstration in comparison to long-duration subjects. We treat all subgroup analyses, including the tests of earnings and SSDI benefits paid, as exploratory.

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[17] Our approach adjusts the *p*-values for the confirmatory outcomes using the Westfall-Young stepdown method. Details of the *p*-value adjustments for tests of impacts on the confirmatory outcomes appear in Appendix A. See Schochet (2009) for further discussion of the multiple comparisons problem.

[18] We measure the duration of SSDI receipt from the outreach release date rather than from the date of random assignment in order to prevent endogenous selection into the duration subgroups. Some beneficiaries may have responded faster to outreach than others and the speed of their response may be correlated with their earnings and benefit outcomes. A short-duration beneficiary who took a long time to respond to outreach before enrolling in the study may have crossed the threshold into the long-duration definition (37 months or more of SSDI receipt) if duration is measured from random assignment. In order to rule out the possibility of subjects determining their subgroup membership after exposure to the study (which occurred when subjects were first solicited to enroll), we measure duration from outreach release date.

2.4.   Final Analysis Sample Sizes

Exhibit 2-2 presents the sizes for the overall sample and the subgroups. The final Stage 2 analysis sample contains a total of 12,744 subjects, spread across T21 (4,854), T22 (3,041), and C2 (4,849).

The baseline characteristics (not shown) for the T21, T22, and C2 samples are statistically equivalent to each other (Gubits et al. 2013). These descriptive findings give us a high level of confidence in the internal validity of the impact estimates. In other words, baseline equivalence bolsters the case that any study findings of statistically significant outcome differences between these samples represent real impacts of the interventions, rather than systematic preexisting differences between the three groups or their environments. The impact estimates are generalizable to the national population of SSDI beneficiaries who would have volunteered for Stage 2 had they been offered the opportunity to enroll in the study.

It was expected that beneficiaries who had received SSDI for a short duration (defined as three years or less) would be more likely to work—and so be more responsive to the work incentives in BOND—than beneficiaries who had received SSDI for a longer time. Therefore, SSA especially sought information in Stage 2 for beneficiaries who had received SSDI for a short duration. To get that information, SSA set a goal of having at least 50 percent of volunteers be short-duration recipients. Because only 32 percent of SSDI-only beneficiaries overall fall into this subpopulation, this goal was accomplished by oversampling short-duration beneficiaries.[19]

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[19]   Short-duration beneficiaries make up 64 percent of all Stage 2 subjects. This percentage reflects two factors. First, of the beneficiaries solicited to volunteer for Stage 2, 53 percent came from the short-duration subpopulation, oversampling by a factor of 1.68. Short-duration beneficiaries were also more likely to volunteer once solicited: 6.4 percent did so compared to 4.2 percent of long-duration beneficiaries.

Exhibit 2-2.   Stage 2 Analysis Sample Composition

Random Assignment Group	Full Sample	Duration	
		Short Duration	**Long Duration**
Stage 2 Sample Unweighted Counts			
T21	4,854	3,125	1,729
T22	3,041	1,914	1,127
C2	4,849	3,102	1,747
Stage 2 Sample Weighted Percentages			
T21	100%	43.2%	56.8%
T22	100%	40.8%	59.2%
C2	100%	42.1%	57.9%

Source: BOND Operations Data System (BODS).

Notes: The total sample size (T21 + T22 + C2) is 12,744. The Stage 2 analysis sample excludes 210 beneficiaries who are related to other BOND subjects (e.g., a primary and a DAC or two DACs with the same primary) to avoid contamination effects that might arise from the fact that almost all such beneficiaries (204 of the 210) were assigned to different BOND groups (see Appendix B for details on this adjustment). Because only six of these beneficiaries would have been able to be retained, it was not feasible to replicate the approach used for the Stage 1 analysis (where we were able to include pairs in which both members were assigned to the same group and revise the weights so that impact estimates reflect impacts for all beneficiary pairs with at least one member in Stage 1 (Stapleton et al. 2013)).

Weights are used to account for differing probabilities of selection into the Solicitation Pool by site and duration of SSDI receipt. The weighted Stage 2 sample size is 278,585 (the estimated number of Stage 2-eligible beneficiaries in the nation who would have volunteered had all Stage 2-eligible beneficiaries been offered the opportunity to enroll in the study).

This exhibit shows 1 additional T21 subject and 1 fewer C2 subject than Exhibit 2-2 in Gubits et al. 2014. The random assignment status of one Stage 2 subject was recorded as T21 and C2 in different subcomponents of BODS. We identified this discrepancy in March of 2015 and corrected it by placing the subject in the T21 group.

3.   Impact Findings

This chapter presents findings on the impact of Stage 2 of BOND in 2014, when the average subject had been enrolled slightly less than 36 months. Those randomly assigned to one of the treatment groups became subject to the offset work incentives starting in 2011 (40 percent of T21 and T22 subjects) or during the first nine months of 2012 (60 percent). Later reports will examine impacts in 2015 and 2016.

There are three policy comparisons:

- The impact of the benefit offset with standard work incentives counseling (WIC) compared to current law (T21 vs. C2);

- The impact of the benefit offset and enhanced work incentives counseling (EWIC) compared to current law (T22 vs. C2); and,

- The incremental impact of adding EWIC to the benefit offset (T22 vs. T21).

For each policy comparison, we report estimates of impact on two confirmatory outcomes and seven exploratory outcomes. Exhibit 3-1 in Section 3.1 displays the impact on the confirmatory outcomes and Exhibit 3-2 in Section 3.2 displays the impacts on the exploratory outcomes. The last section of the chapter breaks out findings into separate results for different subpopulations of the SSDI beneficiaries in the Stage 2 sample.

For each outcome, the exhibits first present regression-adjusted average outcomes for the three random assignment groups[20]; the exhibits then present impact estimates; i.e., regression-adjusted differences between these mean outcomes. Thus for total earnings (first row of Exhibit 3-1), the estimated effect of the offset (plus WIC) compared to current law—shown in the fourth column as $406—equals the difference between the average T21 outcome of $4,594 and the average C2 outcome of $4,188. Other impact columns and other rows of the exhibit follow this same structure.

As explained in Chapter 2, the significance levels for full-sample estimates of impacts on the confirmatory outcomes (total earnings and total SSDI benefits) are adjusted to address the multiple comparisons problem. The statistical significance of the *confirmatory* impact estimates at the 10-, 5-, and 1-percent significance levels are indicated with "#" symbols in the last three columns of the exhibit. For the other *exploratory* outcomes, and for all subgroup analyses, the impact estimates are considered exploratory and their significance levels are not adjusted for multiple comparisons. The significance levels of the exploratory estimates are indicated by asterisks. For the confirmatory outcomes, we describe estimates that are statistically significant at the 10-percent level as "some confirmatory evidence" of demonstration impact, while those significant at the 5-percent level are described as "confirmatory evidence" of impact and those significant at the 1-percent level are characterized as "strong confirmatory evidence." We term as "not statistically significant" any confirmatory impact estimate not significant at even the 10-percent level. Findings concerning exploratory outcomes are dubbed "suggestive" when

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[20]   The regression-adjusted average outcomes are calculated as the average predicted outcomes in the three groups using the common set of coefficients estimated in the regression model. See Appendix A in the *Stage 2 Interim Process, Participation, and Impact Report* (Gubits et al. 2017) for a description of the regression model.

found statistically significant at any of the three significance levels, since they are not adjusted to contain the heightened risk of false positive findings when multiple tests of significance are run.
The last section of the chapter reports findings for different subpopulations of the SSDI beneficiaries in the Stage 2 sample.

3.1. Confirmatory Impacts

Among the many outcomes analyzed in the BOND evaluation, two outcomes are of paramount interest. These we examine for confirmatory evidence that one or both of the Stage 2 BOND interventions compared to current law are having an impact on beneficiaries:[21]

1. Total earnings in the most recent available year (2014 in this report)

2. Total SSDI benefits paid in the most recent available year (2014 in this report)

The Stage 2 impact analysis has a total of six confirmatory hypothesis tests: tests of impacts on these two confirmatory outcomes in each of the three pairwise comparisons. We group the four tests in the T21 vs. C2 and T22 vs. C2 comparisons together because they both involve impacts of the benefit offset. We perform a multiple comparison procedure on these four tests together to adjust the p-values of the tests. We perform a separate multiple comparison procedure to adjust the p-values of the two confirmatory tests in the T22 vs. T21 comparison that solely concern a difference in counseling approaches (EWIC vs. WIC).

For total earnings received from January through December 2014, we do not find statistically significant effects on either treatment group, relative to current law (Exhibit 3-1). Estimated impacts on mean earnings (first row of the exhibit) are $421 for the offset-plus-WIC compared to current law, and $399 for the offset-plus-EWIC compared to current law. The adjusted p-values for these two impact estimates equal 0.164 and 0.246, respectively, and so do not meet the study's established standard for statistical significance ($p < 0.10$).[22] These findings are consistent with the failure to find evidence of an effect on 2012 and 2013 earnings for the offset combined with either WIC or EWIC (Gubits et al. 2014, Gubits et al. 2017). The size of the impact estimates for 2014 is similar to the size of the impact estimates on 2012

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[21] These two outcomes were identified in the *BOND Evaluation Analysis Plan* (Bell et al. 2011) for confirmatory analysis, prior to the research team having access to outcome data for study subjects. Pre-specifying outcomes for confirmatory analysis prior to having access to outcome data is standard evaluation practice. It makes transparent that researchers have selected the study's confirmatory outcomes based on hypotheses developed prior to looking at the data, rather than based on the estimates of impact for many different outcomes. See the discussion of confirmatory outcomes in Chapter 6, Section 6.1, of Bell et al. 2011.

In later reports, impacts on earnings and SSDI benefits in subsequent years (always the most recent available year) will become the confirmatory outcomes, supplanting the confirmatory impact estimates published in the current report. The practice of supplanting previous confirmatory impact estimates with the most recent available estimates reflects the supremacy of long-term impacts in determining the interventions' impacts on earnings and benefits.

[22] Before adjustment for multiple comparisons, the unadjusted p-value for the offset plus WIC compared to current law is 0.075 and the unadjusted p-value for the offset plus EWIC compared to current law is 0.219.

and 2013 earnings: estimates for all years and both policy comparisons range between 8 and 10 percent of average earnings under current law (with rounding).

Similar to the 2012 and 2013 findings, we find no evidence of an incremental effect of EWIC compared to WIC. The point estimate of impact on earnings for this comparison is negative, small (-$22), and not statistically significant.

Exhibit 3-1. **Estimated Impacts on 2014 Total Earnings and Total SSDI Benefits Paid of Stage 2 Volunteers: All Policy Comparisons**

Outcome	Average Outcome with Offset and WIC (T21) (1)	Average Outcome with Offset and EWIC (T22) (2)	Average Outcome under Current Law (C2) (3)	Estimated Impact of Offset + WIC vs Current Law (T21 vs. C2) (4)	Estimated Impact of Offset + EWIC vs Current Law (T22 vs. C2) (5)	Estimated Impact of EWIC instead of WIC Given Offset (T22 vs. T21) (6)
Earnings Outcomes (January–December 2014)						
Total earnings	$4,608	$4,586	$4,188	$421[a] ($209)	$399[a] ($301)	$-22 ($224)
Benefit Outcomes (January–December 2014)						
Total SSDI benefits paid	$12,567	$12,617	$12,197	$370[b]# ($127)	$420[b]# ($141)	$50 ($196)

Source: Analysis of SSA administrative records (from the MEF, BODS, MBR, and SSR), with covariates from Stage 2 baseline survey and baseline SSA administrative data used in impact analysis regression equations.

Notes: See Chapter 2 for variable definitions. Weights reflecting sample selection are used to ensure that the BOND subjects who met analysis criteria are representative of the national population of SSDI-only beneficiaries who would volunteer for study enrollment. Standard errors are in parentheses. Means and impact estimates are regression-adjusted for baseline characteristics.

Unweighted sample sizes: T21 = 4,854, T22 = 3,041, C2 = 4,849

#/##/### Impact estimate is significantly different from zero at the .10/.05/.01 level, respectively, using a confirmatory standard of evidence (p-value adjusted by the multiple comparisons procedure) and a two-tailed t-test with 9 degrees of freedom.

[a] The impact estimates for total earnings for T21 vs. C2 and for T22 vs. C2 had p-values after multiple comparison adjustment of 0.164 and 0.246, respectively, and hence do not provide confirmatory evidence of an impact.

[b] The impact estimate for total SSDI benefits paid for T21 vs. C2 and for T22 vs. C2 both had p-values after multiple comparison adjustments of 0.074. Hence, the data provide confirmatory evidence of an impact.

There is some confirmatory evidence that the offset increased total SSDI benefits paid in 2014. Estimated impacts on benefits are $370 annually for the comparison of the offset plus WIC to current law and $420 for the comparison of the offset plus EWIC to current law. The size of these impacts is consistent with the 2012 and 2013 findings—roughly 3 percent of average benefits under current law ($12,197 in 2014). However, 2014 is the first year for which the impact estimates are statistically significant after the multiple comparisons adjustment. The adjusted p-value of both of these estimates is 0.074.

Similar to the 2012 and 2013 findings, we find no evidence of an incremental effect of EWIC compared to WIC. The point estimate of impact on SSDI benefits for this comparison is small ($50) and not statistically significant.

3.2.   Exploratory Impacts

The previous section reported results for confirmatory outcomes, finding some evidence of an impact on SSDI benefits paid but no evidence of an impact on earnings. This section considers potential impacts on other earnings- and benefit-related outcomes—outcomes tested for effects on an exploratory rather than confirmatory basis.

Seven other outcomes related to earnings and benefit amounts are available in administrative data: any employment during the year and in various dollar ranges relative to BYA, number of months of SSDI receipt over a year, and total dollars and number of months of payments from the Supplemental Security Income (SSI) program. We report impacts on these measures for 2014 in this section. Consistent with the *BOND Evaluation Analysis Plan* (Bell et al. 2011), we consider these analyses to be exploratory and therefore do not make any correction for multiple comparisons. As a result, any statistically significant findings are suggestive of where further effects of the benefit offset plus EWIC or WIC may have taken place. Even if the intervention had no impact on any of the measures examined here, we would expect some of the impact estimates to be statistically significant by chance alone due to the fact that we conduct many hypothesis tests in this section.

3.2.1.   Exploratory Impacts on Earnings-Related Outcomes

As stated in Chapter 2, the offset is predicted to have two countervailing effects on earnings: a *positive* effect on average earnings for those who would not engage in SGA under current law (i.e. without the offset) and a *negative* effect on average earnings for those who would earn above the SGA level under current law. The net result of these two changes can be an earnings impact in either direction or no earnings effect at all.

Exhibit 3-2 provides exploratory evidence that the offset plus WIC increased the proportion of sample members employed (i.e., those with any earnings during 2014). Exhibit 3-2 also provides strong exploratory evidence that the offset plus WIC increased the proportion earning above BYA that year. While there is no evidence that the offset plus EWIC affected employment, there is strong exploratory evidence that the offset plus EWIC increased the proportion of sample members with earnings above BYA in 2014. These findings conform to an unambiguous prediction of theory that by removing the benefit cliff at earnings above BYA, the offset will increase employment and the proportion of beneficiaries with earnings above BYA. In the current law control group, 36 percent of beneficiaries had some employment in 2014 and 9 percent had earnings above the BYA. The offset plus WIC increased the proportion employed by 3 percentage points (a 7 percent increase, after rounding) and the proportion with earnings above the BYA by 3 percentage points (a 27 percent increase, after rounding). While the offset plus EWIC did not yield a statistically significant increase in the total employment rate compared to the current law control group, it did increase the proportion with earnings above BYA by 3 percentage points (a 29 percent increase, after rounding).

That these employment effects are taking place without confirmatory evidence of impact on average earnings could be due to multiple factors. One possible explanation is that average earnings in the treatment groups may have increased, but not enough to be statistically significant. In particular, the estimated impact on the proportion with earnings above BYA is small (2.52 percentage points for the offset plus WIC, and 2.69 percentage points for the offset plus EWIC), and modest differences in mean earnings within this small proportion of the study sample are hard to detect because they are averaged

with earnings for the rest of study sample. It is also possible that even as a greater proportion of subjects chose to earn above BYA, average earnings *within* one or more of the earnings ranges far above BYA may have declined (for illustration, a person who would earn 2.9 times BYA without the offset might choose to earn 2.0 times BYA if offered the offset). This possibility is consistent with theory, which predicts that subjects who under current law would choose to earn between BYA and the amount where benefits would be reduced to $0 under the offset (i.e., the end of the offset "ramp," on average about three times BYA) will *decrease* their earnings if the offset is available (thereby obtaining more leisure time at the same or greater total income).

Similar to the 2012 and 2013 findings, we find no evidence of an incremental effect of EWIC compared to WIC on employment or earnings above BYA.

Exhibit 3-2.   Estimated Impacts on 2014 Earnings and Benefits of Stage 2 Volunteers: Exploratory Results, All Policy Comparisons

Outcome	Average Outcome with Offset and WIC (T21) (1)	Average Outcome with Offset and EWIC (T22) (2)	Average Outcome under Current Law (C2) (3)	Estimated Impact of Offset + WIC vs Current Law (T21 vs. C2) (4)	Estimated Impact of Offset + EWIC vs Current Law (T22 vs. C2) (5)	Estimated Impact of EWIC instead of WIC Given Offset (T22 vs. T21) (6)
Earnings Outcomes (January–December 2014)						
Employment during year (%)	38.94	38.42	36.47	2.47** (0.99)	1.95 (1.12)	-0.52 (1.14)
Earnings above BYA (%)	11.72	11.88	9.20	2.52*** (0.70)	2.69*** (0.79)	0.16 (0.77)
Earnings above 2x BYA (%)	4.49	4.23	3.90	0.59 (0.44)	0.33 (0.52)	-0.26 (0.50)
Earnings above 3x BYA (%)	1.89	1.77	1.93	-0.05 (0.31)	-0.17 (0.35)	-0.12 (0.34)
Benefit Outcomes (January–December 2014)						
Number of months with SSDI payments	10.97	11.07	10.67	0.30*** (0.07)	0.40*** (0.08)	0.10 (0.08)
Total SSI benefits paid	$47	$42	$34	$13 ($10)	$8 ($11)	$-5 ($13)
Number of months with SSI payments	0.21	0.22	0.19	0.01 (0.03)	0.03 (0.04)	0.02 (0.05)

Source: Analysis of SSA administrative records (from the MEF, BODS, MBR, and SSR), with covariates from Stage 2 baseline survey and baseline SSA administrative data used in impact analysis regression equations.

Notes: See Chapter 2 for variable definitions. Weights reflecting sample selection are used to ensure that the BOND subjects who met analysis criteria are representative of the national population of SSDI-only beneficiaries who would volunteer for study enrollment. Standard errors are in parentheses. Means and impact estimates are regression-adjusted for baseline characteristics.

Unweighted sample sizes: T21 = 4,854, T22 = 4,849, and C2 = 3,041

*/**/*** Impact estimate is significantly different from zero at the .10/.05/.01 levels, respectively, using a two-tailed t-test with 9 degrees of freedom (and with no multiple comparisons adjustment).

3.2.2.   Exploratory Impacts on Benefit-Related Outcomes

This section considers exploratory impacts on benefit-related outcomes. There is strong exploratory evidence that the offset—both with WIC and with EWIC—increased the mean number of months of SSDI receipt by 0.3 and 0.4 months, respectively. These estimates represent a 3 to 4 percent increase over the average number of months of SSDI receipt for C2 subjects. This finding is consistent with the confirmatory finding that the offset plus WIC and the offset with EWIC both increased benefits paid in 2014. This finding is also expected because treatment subjects whose earnings would have been above BYA under current law receive partial benefits under the offset but would have had their benefits suspended under current law.

There is no evidence of any impact of the offset-plus-WIC or the offset-plus-EWIC on SSI benefits received or number of months of SSI receipt in 2013. There is also no evidence that EWIC does more than WIC to affect the number of months of SSDI receipt, number of months of SSI receipt, or amount of SSI benefits.

3.3.   Subgroups Defined by Duration of SSDI Participation

We also explored whether the Stage 2 treatments affected earnings and benefits differently for beneficiaries who had been receiving SSDI for a relatively long duration prior to random assignment, compared to those who had received SSDI for a shorter duration prior to random assignment. It was expected that beneficiaries who had received SSDI for a short duration would be more responsive to the work incentives in BOND than beneficiaries who had received SSDI for a longer time. We define short-duration beneficiaries as those who had received SSDI for up to three years (36 months) at the time they were solicited to volunteer for the study. All other sample members are considered long-duration beneficiaries.

All subgroup analyses are exploratory. The significance tests are not adjusted for multiple comparisons. Therefore, at best, these subgroup results provide only suggestive evidence of impacts for subpopulations. In Appendix B, we compare impact estimates across duration groups for each of the follow impacts:

- The offset plus WIC compared to current law (T21 versus C2);

- The offset plus EWIC compared to current law (T22 versus C2);

- The offset with either type of work incentives counseling compared to current law (T22 combined with T21 versus C2); and

- The offset plus EWIC compared to the offset plus WIC (T22 versus T21).

The findings appear in Exhibits B-1, B-2, B-3, and B-4. The evidence of the offset impacts seen in the full sample, given either type of counseling, is essentially similar for both short-duration (36 months or less) and long-duration SSDI beneficiaries.

Out of 28 hypothesis tests, only one difference between estimated impacts for the two subgroups is statistically significant (shown in column 7 of Exhibits B-1, B-2, B-3, and B-4). Exhibit B-3 shows some exploratory evidence that EWIC (in comparison to WIC) had a larger (more positive) impact on the number of months with SSI payments for subjects with a long duration of SSDI receipt, compared to subjects with a short duration of SSDI receipt. Because only one out of 28 tests was statistically

significant, there is a strong possibility that this result is due to chance sampling variation. Substantively, the particular result does not seem meaningful because there is neither evidence of an impact of EWIC on number of months with SSI payments for short-duration beneficiaries alone (column 3), nor for long-duration beneficiaries alone (column 6). Also, there is no evidence of a similar differential impact on total SSI benefits paid.

4.   Discussion

The findings in this report apply only to the Stage 2 sample in calendar year 2014. The Stage 2 sample is composed of the SSDI beneficiaries thought most likely to respond to the offset work incentives. Specifically, the Stage 2 sample is made up of volunteers who wished to have the offset rules applied to them and who did not initially receive SSI.

We found some confirmatory evidence that the offset rules combined with standard work incentives counseling (WIC) or enhanced work incentives counseling (EWIC) *increased mean SSDI benefits paid* compared to what they would have been under current law earnings rules and counseling services. There is no confirmatory evidence that the offset paired with either WIC or EWIC had an impact on total earnings in 2014. Similarly, we found no confirmatory evidence that the offset plus EWIC had impacts different from the offset plus WIC.

Some exploratory findings showed impacts:

- There is strong exploratory evidence that the offset plus WIC and the offset plus EWIC increased the proportions of beneficiaries with earnings above BYA.

- There is exploratory evidence that the offset plus WIC increased the proportion of beneficiaries with any employment in 2014.

- Consistent with the confirmatory findings, there is strong exploratory evidence that both the offset plus WIC and the offset plus EWIC led to an increase in the number of months with SSDI benefits payments.

All three of these exploratory results are consistent with the theory (and the theory had no clear predictions for the confirmatory outcomes). The evidence of the offset impacts, given either type of counseling, arises for both short-duration (36 months or less) and long-duration SSDI beneficiaries, and is not appreciably stronger for either group.

Later reports will explore how the consequences of the benefit offset and special counseling services evolve over the longer run for Stage 2 subjects. Additional impact analyses will also examine new outcome measures (once data from the Stage 2 36-month beneficiary follow-up survey is available) and consider more beneficiary subgroups of interest to SSA. Finally, future impact analyses will consider impacts on SSDI benefits paid *for* the evaluation period. This measure will reflect retroactive adjustments to benefits, and so will be particularly informative in understanding the effects of the T21 and T22 treatments. The Final Report will consider these results in the context of the motivation for BOND and the broader debate about disability policy.

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Appendix A.   Social Security Earnings Measure

The Social Security Administration made the Summary Segment of the Master Earnings File (MEF) available to this evaluation. The MEF is SSA's primary repository of earnings data for the US population. The MEF contains all information from the W-2 forms submitted annually by employers to SSA for each paid employee and the relevant information for calculating benefits from 1040-SE forms that self-employed individuals send to the IRS. The Summary Segment summarizes a limited set of data from the MEF. Therefore a limited set of information is available to the BOND evaluation. For example, the Summary Segment does not include total earnings subject to income tax. Rather, the Summary Segment contains data on annual earnings that are subject to Old-Age, Survivors, and Disability Insurance (OASDI) taxes, otherwise known as Social Security taxes. The revenue from OASDI taxes funds insurance benefit payments to retired workers and their spouses and children; survivors of deceased workers; and disabled workers and their spouses and dependent children (SSA Social Insurance Programs, accessed 9/19/2016). We next describe how Social Security taxes are reported to SSA.

The W-2 form lists several types of earnings amounts (Exhibit A-1 provides an image of the form). In Box 1 of the W-2 form, employers are required to report an employee's total wage, tips, and other compensation that is subject to income tax. Several types of wages are excluded from Box 1, such as payments to retirement accounts (401Ks). Employers are required to report social security taxable earnings in Box 3 ("Social security wages") and Box 7 ("Social security tips"); payments to retirement accounts are taxed, and therefore included. Social Security taxable earnings are capped at a maximum (IRS 2016). For 2013, the maximum was $113,700.[23] Amounts above this maximum are not subject to Social Security taxes, and thus the sum of Box 3 and Box 7 will never exceed the maximum, regardless of what is reported in Box 1. The sum of Box 3 and Box 7 could be less than Box 1 (for example, because wages exceed the wage base limit). However, the sum of Box 3 and Box 7 could also be more than Box 1 (for example, payments to retirement accounts and dependent care accounts are taxable for Social Security in the year they are earned).

The Summary Segment of the MEF contains the summed total of the Social Security earnings amounts from all of the W-2 forms (Box 3 and Box 7) and the 1040-SE form posted to the MEF. Therefore, the summed totals of Social Security earnings amounts are the data available to the BOND evaluation. There are some disadvantages to relying on Social Security earnings as an overall earnings measure. Social Security earnings may be different from all employment income for the following reasons:

(1) Not all jobs are covered by Social Security. Non-covered jobs include some state and local government positions and railroad workers. Only six percent of the US workforce does not participate in Social Security (Annual Statistical Supplement to the Social Security Bulletin, 2015). For example, teachers in some states do not pay Social Security taxes on their earnings. Of the BOND sites, teachers in Colorado, Maine, and Massachusetts fall into this category.

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[23]   The maximum social security taxable earnings varies each year, generally increasing with inflation. For 2011 and 2012, the maximums were $106,800 and $110,100, respectively.

(2) For each W-2 and 1040-SE form, Social Security earnings are capped at a maximum taxable amount, $113,700 for 2013. However, very few have earnings at or above that amount (in 2013, 0.01 percent of all Stage 2 participants have earnings at or above the taxable amount). In addition, beneficiaries who are earning at or above that amount are unlikely to have a behavioral response to the offset.

(3) Not all work and earnings will be reported on a W-2 or 1040-SE form (i.e. "under-the-table" earnings).

As the earnings data available on the Summary Segment of the MEF do not include all earnings countable towards SGA, our estimates of earnings, employment, and proportion working above BYA may have a small downward bias compared to measures defined by total earnings countable towards SGA.[24] In addition, the estimate of the impact of the offset on earnings, employment and proportion working above BYA may have a small downward bias if some who are encouraged to work choose jobs not covered by Social Security (item number one in the list, above). On the other hand, the estimate could have a slight upward bias due to the fact that the offset may induce some people with under the table earnings to report them. Measures of weekly earnings and employment taken from survey data should not be subject to the same source of bias (though they are subject to other biases; in particular, recall bias and non-response bias).

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[24] Not available for this evaluation, the Social Security Administration also has records of Box 1 earnings in the Detailed Segment of the MEF. Still, Box 1 earnings data would not offer a complete picture of earnings countable towards SGA because not all work and earnings are reported on a W-2 or 1040-SE form.

Exhibit A-1.   W-2 Wage and Tax Statement

Form **W-2** Wage and Tax Statement **2014** Department of the Treasury—Internal Revenue Service

Copy A For Social Security Administration — Send this entire page with Form W-3 to the Social Security Administration; photocopies are **not** acceptable.

For Privacy Act and Paperwork Reduction Act Notice, see the separate instructions.

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Appendix B.   Stage 2 Subgroup Impact Estimates

Exhibit B-1.   **Estimated Impacts on 2014 Outcomes of the Offset Compared to Current Law (T21 Vs. C2) for Subgroups Defined by Duration of SSDI Receipt**

	Short Duration			Long Duration			
Outcome	**Average Outcome with Offset and WIC (T21) (1)**	**Average Outcome under Current Law (C2) (2)**	**Impact Estimate (3)**	**Average Outcome with Offset and WIC (T21) (4)**	**Average Outcome under Current Law (C2) (5)**	**Impact Estimate (6)**	**Estimated Difference in Impact (7)**
Earnings Outcomes (January–December 2014)							
Total earnings	$4,739	$4,460	$280 ($340)	$4,520	$3,990	$529 ($381)	$-249 ($615)
Employment during year (%)	37.37	35.29	2.08 (1.58)	40.11	37.33	2.78* (1.48)	-0.71 (2.72)
Earnings above BYA (%)	11.35	9.46	1.89* (0.94)	12.01	9.01	3.01** (1.29)	-1.12 (1.83)
Earnings above 2x BYA (%)	4.90	5.00	-0.10 (0.67)	4.21	3.11	1.10 (0.63)	-1.20 (0.86)
Earnings above 3x BYA (%)	2.39	2.52	-0.13 (0.55)	1.52	1.51	0.02 (0.43)	-0.15 (0.73)
Benefit Outcomes (January–December 2014)							
Total SSDI benefits paid	$13,148	$12,748	$400** ($160)	$12,142	$11,796	$346* ($189)	$54 ($248)
Number of months with SSDI payments	11.03	10.65	0.38*** (0.09)	10.93	10.68	0.25* (0.11)	0.13 (0.14)
Total SSI benefits paid	$53	$48	$5 ($15)	$42	$24	$18 ($15)	$-13 ($21)
Number of months with SSI payments	0.28	0.23	0.05 (0.05)	0.15	0.16	-0.01 (0.05)	0.06 (0.07)

Source: Analysis of SSA administrative records (from the MEF, BODS, MBR, and SSR), with covariates from Stage 2 baseline survey and baseline SSA administrative data used in impact analysis regression equations.

Notes: See Chapter 2 for variable definitions. Weights reflecting sample selection are used to ensure that the BOND subjects who met analysis criteria are representative of volunteers for offset participation in the nation. Standard errors are in parentheses. Means and impact estimates are regression-adjusted for baseline characteristics.

Unweighted sample sizes: Short Duration T21 = 3,125, Short Duration C2 = 3,102, Long Duration T21 = 1,729, Long Duration C2 = 1,747.

*/**/*** Impact estimate is significantly different from zero at the .10/.05/.01 levels, respectively, using a two-tailed t-test with 9 degrees of freedom (and with no multiple comparisons adjustment).

†/††/††† Difference in impact estimates is significantly different from zero at the .10/.05/.01 levels, respectively, using an F-test.

Exhibit B-2.   **Estimated Impacts on 2014 Outcomes of the Offset Compared to Current Law (T22 Vs. C2) for Subgroups Defined by Duration of SSDI Receipt**

Outcome	Short Duration			Long Duration			Estimated Difference in Impact (7)
	Average Outcome with Offset and EWIC (T22) (1)	Average Outcome under Current Law (C2) (2)	Impact Estimate (3)	Average Outcome with Offset and EWIC (T22) (4)	Average Outcome under Current Law (C2) (5)	Impact Estimate (6)	
Earnings Outcomes (January–December 2014)							
Total earnings	$5,090	$4,460	$631* ($340)	$4,228	$3,990	$237 ($444)	$394 ($538)
Employment during year (%)	39.18	35.29	3.89** (1.38)	37.92	37.33	0.59 (1.64)	3.30 (2.15)
Earnings above BYA (%)	12.49	9.46	3.02*** (0.90)	11.46	9.01	2.46* (1.14)	0.57 (1.41)
Earnings above 2x BYA (%)	5.37	5.00	0.37 (0.63)	3.42	3.11	0.31 (0.70)	0.06 (0.92)
Earnings above 3x BYA (%)	2.50	2.52	-0.02 (0.44)	1.24	1.51	-0.27 (0.52)	0.24 (0.65)
Benefit Outcomes (January–December 2014)							
Total SSDI benefits paid	$12,972	$12,748	$224 ($174)	$12,354	$11,796	$558** ($208)	$-334 ($272)
Number of months with SSDI payments	11.01	10.65	0.36*** (0.09)	11.11	10.68	0.43*** (0.12)	-0.07 (0.20)
Total SSI benefits paid	$42	$48	$-7 ($12)	$42	$24	$18 ($16)	$-25 ($20)
Number of months with SSI payments	0.21	0.23	-0.02 (0.05)	0.23	0.16	0.06 (0.06)	-0.08 (0.08)

Source: Analysis of SSA administrative records (from the MEF, BODS, MBR, and SSR), with covariates from Stage 2 baseline survey and baseline SSA administrative data used in impact analysis regression equations.

Notes: See Chapter 2 for variable definitions. Weights reflecting sample selection are used to ensure that the BOND subjects who met analysis criteria are representative of volunteers for offset participation in the nation. Standard errors are in parentheses. Means and impact estimates are regression-adjusted for baseline characteristics.

Unweighted sample sizes: Short Duration T21 = 1,914, Short Duration C2 = 3,102, Long Duration T21 = 1,127, Long Duration C2 = 1,747.

*/**/*** Impact estimate is significantly different from zero at the .10/.05/.01 levels, respectively, using a two-tailed t-test with 9 degrees of freedom (and with no multiple comparisons adjustment).

†/††/††† Difference in impact estimates is significantly different from zero at the .10/.05/.01 levels, respectively, using an F-test.

Exhibit B-3.   Estimated Impacts on 2014 Outcomes of the Offset Compared to Current Law (T22 Vs. T21) for Subgroups Defined by Duration of SSDI Receipt

	Short Duration			Long Duration			
Outcome	**Average Outcome with Offset and EWIC (T22) (1)**	**Average Outcome with Offset and WIC (T21) (2)**	**Impact Estimate (3)**	**Average Outcome with Offset and EWIC (T22) (4)**	**Average Outcome with Offset and WIC (T21) (5)**	**Impact Estimate (6)**	**Estimated Difference in Impact (7)**
Earnings Outcomes (January–December 2014)							
Total earnings	$5,090	$4,739	$351 ($473)	$4,228	$4,520	$-292 ($292)	$643 ($676)
Employment during year (%)	39.18	37.37	1.81 (1.84)	37.92	40.11	-2.19* (1.01)	4.01 (2.72)
Earnings above BYA (%)	12.49	11.35	1.13 (1.21)	11.46	12.01	-0.55 (0.93)	1.68 (1.67)
Earnings above 2x BYA (%)	5.37	4.90	0.47 (0.85)	3.42	4.21	-0.79 (0.45)	1.26 (1.06)
Earnings above 3x BYA (%)	2.50	2.39	0.11 (0.61)	1.24	1.52	-0.28 (0.42)	0.39 (0.83)
Benefit Outcomes (January–December 2014)							
Total SSDI benefits paid	$12,972	$13,148	$-176 ($174)	$12,354	$12,142	$212 ($276)	$-388 ($268)
Number of months with SSDI payments	11.01	11.03	-0.02 (0.10)	11.11	10.93	0.18** (0.08)	-0.20 (0.13)
Total SSI benefits paid	$42	$53	$-12 ($15)	$42	$42	$0 ($18)	$-12 ($22)
Number of months with SSI payments	0.21	0.28	-0.07 (0.06)	0.23	0.15	0.08 (0.06)	-0.14† (0.08)

Source: Analysis of SSA administrative records (from the MEF, BODS, MBR, and SSR), with covariates from Stage 2 baseline survey and baseline SSA administrative data used in impact analysis regression equations.

Notes: See Chapter 2 for variable definitions. Weights reflecting sample selection are used to ensure that the BOND subjects who met analysis criteria are representative of volunteers for offset participation in the nation. Standard errors are in parentheses. Means and impact estimates are regression-adjusted for baseline characteristics.

Unweighted sample sizes: Short Duration T21 = 1,914, Short Duration C2 = 3,125, Long Duration T21 = 1,127, Long Duration C2 = 1,729.

*/**/*** Impact estimate is significantly different from zero at the .10/.05/.01 levels, respectively, using a two-tailed t-test with 9 degrees of freedom (and with no multiple comparisons adjustment).

†/††/††† Difference in impact estimates is significantly different from zero at the .10/.05/.01 levels, respectively, using an F-test.

Exhibit B-4.　　Estimated Impacts on 2014 Outcomes of the Offset Compared to Current Law (T22 + T21 vs C2) for Subgroups Defined by Duration of SSDI Receipt

Outcome	Short Duration			Long Duration			Estimated Difference in Impact (7)
	Average Outcome with Offset and WIC and EWIC (T22 + T21) (1)	Average Outcome under Current Law (C2) (2)	Impact Estimate (3)	Average Outcome with Offset and WIC and EWIC (T22 + T21) (4)	Average Outcome under Current Law (C2) (5)	Impact Estimate (6)	
Earnings Outcomes (January–December 2014)							
Total earnings	$4,870	$4,460	$411 ($256)	$4,403	$3,990	$413 ($381)	$-2 ($488)
Employment during year (%)	38.04	35.29	2.75** (1.13)	39.24	37.33	1.91 (1.31)	0.84 (1.89)
Earnings above BYA (%)	11.78	9.46	2.31*** (0.70)	11.79	9.01	2.79** (1.14)	-0.48 (1.42)
Earnings above 2x BYA (%)	5.08	5.00	0.08 (0.52)	3.90	3.11	0.79 (0.55)	-0.71 (0.55)
Earnings above 3x BYA (%)	2.43	2.52	-0.09 (0.41)	1.41	1.51	-0.10 (0.38)	0.01 (0.57)
Benefit Outcomes (January–December 2014)							
Total SSDI benefits paid	$13,082	$12,748	$334** ($143)	$12,227	$11,796	$430** ($168)	$-96 ($130)
Number of months with SSDI payments	11.02	10.65	0.37*** (0.08)	11.00	10.68	0.32** (0.10)	0.05 (0.15)
Total SSI benefits paid	$49	$48	$1 ($12)	$42	$24	$18 ($11)	$-17 ($15)
Number of months with SSI payments	0.25	0.23	0.02 (0.04)	0.18	0.16	0.02 (0.04)	0.01 (0.05)

Source: Analysis of SSA administrative records (from the MEF, BODS, MBR, and SSR), with covariates from Stage 2 baseline survey and baseline SSA administrative data used in impact analysis regression equations.

Notes: See Chapter 2 for variable definitions. Weights reflecting sample selection are used to ensure that the BOND subjects who met analysis criteria are representative of volunteers for offset participation in the nation. Standard errors are in parentheses. Means and impact estimates are regression-adjusted for baseline characteristics.

Unweighted sample sizes: Short Duration T21 = 5,039, Short Duration C2 = 3,102, Long Duration T21 = 2,856, Long Duration C2 = 1,747.

*/**/*** Impact estimate is significantly different from zero at the .10/.05/.01 levels, respectively, using a two-tailed t-test with 9 degrees of freedom (and with no multiple comparisons adjustment).

†/††/††† Difference in impact estimates is significantly different from zero at the .10/.05/.01 levels, respectively, using an F-test.