BOND Implementation and Evaluation

Evaluation Analysis Plan

Deliverable 16.1

March 19, 2011

Abt

Center for Studying
DISABILITY POLICY
MATHEMATICA
Policy Research, Inc.

Contents

Acronyms Used in this Report

AIME	Average Indexed Monthly Earnings		**MaRC**	Master Record Component
AWI	Average Wage Index		**MAX**	Medicaid Analytical Extract
BODS	BOND Operations Data System		**MEF**	Master Earnings File
BOSIM	Benefit Offset Simulation Model		**MBI**	Medicaid Buy-in
BOND	Benefit Offset National Demonstration		**MDE**	Minimum Detectable Effect
BOPD	Benefit Offset Pilot Demonstrations (Four state pilot)		**MSIS**	Medicaid Statistical Information System
BTS	Beneficiary Tracking System		**OASDI**	Old-Age, Survivors, and Disability Insurance
BYA	BOND Yearly Amount		**OASI**	Old-Age and Survivors Insurance
CATI	Computer Assisted Telephone Interviewing		**OPDR**	Office of Policy Development and Research
CAPI	Computer Assisted in Person Interviewing		**PDI**	Private Disability Insurance
CDR	Continuing Disability Reviews		**PII**	Personal Identifying Information
CMS	Centers for Medicare & Medicaid Services		**RSA**	Rehabilitation Services Administration
CWIC	Community Work Incentive Coordinators		**SGA**	Substantial Gainful Activity
DAC	Disabled Adult Child		**SNAP**	Supplemental Nutrition Assistance Program
DER	Detailed Earnings Records		**SSA**	Social Security Administration
DWB	Disabled Widow/Widowers		**SSI**	Supplemental Security Income
EN	Employment Network		**SSDI**	Social Security Disability Insurance
EPE	Extended Period of Eligibility		**SVRA**	State Vocational Rehabilitation Agency
EWIC	Enhanced Work Incentives Counseling, Or Counselor		**TRF**	Ticket Research File
EDB	Medicare Enrollment Data Base		**TTW**	Ticket-to-Work
DESY	Data Extract System		**TWP**	Trial Work Period
FMAX	Family Maximum		**WC**	Workers' Compensation
GDP	Gross Domestic Product		**WIC**	Work Incentive Counseling, Or Counselor
GP	Grace Period		**WIPA**	Work Incentives, Planning, and Assistance
IRS	Internal Revenue Service		**WISE**	Work Incentives Seminars
IRWE	Impairment Related Work Expenses			

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 group, at either stage. 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.

Chapter One.   Introduction

Administered by the U.S. Social Security Administration (SSA), Social Security Disability Insurance (SSDI) is the nation's primary earnings-replacement program for workers who become disabled. As part of the Ticket to Work and Work Incentives Improvement Act of 1999, Congress asked SSA to implement and evaluate a demonstration that would examine a change to SSDI, incorporating a $1 for $2 benefit offset that will allow beneficiaries to retain more of their monthly cash benefit while working. The *BOND Final Design Report* (hereafter *Design Report*) discusses the rationale for the offset and the demonstration and presents the demonstration design.[1] The current document (hereafter *Analysis Plan*) provides the detailed plan for evaluation of the BOND innovations.

The plan for the evaluation is integral to the demonstration's design, reflecting the demonstration's purpose: to generate useful information for SSA, policymakers and other interested parties. Development and advance publication of a detailed analysis plan helps ensure that the information sought will, in fact, be produced. It also helps ensure that the evaluation will be objective. The evaluators and SSA have jointly developed this plan before seeing the findings; and SSA is committed to carrying out this plan regardless of the findings. Finally, the *Analysis Plan* provides enough detail to allow others to critique the plan in advance of the findings. Such critiques, or other unforeseen circumstances, may mean that the evaluation will depart from the *Analysis Plan* with respect to at least some of its details. Subsequent reports will explicitly note and clearly justify any such changes.

This chapter begins with an overview of BOND, then goes on to present the demonstration's design and a summary of the evaluation plan. The chapter concludes with an overview of the rest of the report.

1.1   BOND Overview

SSDI is the disability component of Old Age Survivors and Disability Insurance (OASDI), commonly known as Social Security. Workers contribute to Social Security through payroll taxes and earn the right to benefits for themselves and their dependents when they reach retirement age, die, or, in the case of SSDI, experience the onset of a disability that prevents them from earning more than a minimal amount. The disabled adult children (DAC) and disabled widow(er)s (DWB) of Social Security beneficiaries may also qualify for benefits.

BOND will test innovations to SSDI that are designed to address the financial disincentives and other obstacles to increasing the earnings and reducing the dependence on benefits of SSDI beneficiaries. The primary purpose of BOND is to estimate the effects on earnings, benefit receipt, and income of changing a current feature of SSDI that is tied to SSDI's statutory definition of disability.

Current Policy

By statute, to qualify for SSDI benefits, an individual must be unable to engage in substantial gainful activity (SGA). In essence, SGA is defined as the ability to earn a minimum monthly amount. In 2010, the SGA amount for non-blind beneficiaries is $1,000 per month, net of certain impairment-related work expenses

---

[1]   See Stapleton et al. (2010a).

(IRWE). In order to be eligible for SSDI, individuals must establish that they are not capable of performing SGA.

Given this definition, earnings above SGA are evidence that the beneficiary is able to work—and, therefore, no longer eligible for the program. Consistent with this logic, SSDI beneficiaries earning more than the SGA level have their full benefit suspended if their earnings reach or exceed the SGA level for more than 12 months, after having completed a nine-month Trial Work Period (TWP) and three Grace Period (GP) months. They enter the Extended Period of Eligibility (EPE) immediately after TWP completion. Through the end of the 36th EPE month, benefits are re-instated without re-application if earnings fall below the SGA level (the "re-entitlement" period). If earnings exceed the SGA level after the re-entitlement period ends and all GP months have been used, benefits are terminated, after which the beneficiary can only obtain benefits by reapplying.[2] Otherwise, benefits continue in full.

A timeline illustrating these provisions appears in **Exhibit 1-1**. This exhibit shows a history of earnings (E) and SSDI benefits (B) over 47 months for a hypothetical beneficiary with earnings that cause her or him to pass through the phases of program participation just described:

- Trial Work Period (Months 1-9),

- GP (Months 10-12), at the beginning of the EPE,

- Re-entitlement period (Months 10-45), and

- Termination (Month 46).

In the TWP, earnings (E) are above the $720 TWP level in all nine months involved.[3] But benefits (B) continue unabated. The same is true in the GP, months 10 through 12, during which earnings are above the SGA of $1,000 each month.[4] Suspension of benefits occurs in Months 13 and 14, and again in months 16 through 45. However, because this is the re-entitlement period, benefits resume in any month with earnings below SGA—such as Month 15. Finally, at the end of the re-entitlement period, continued earnings above SGA trigger benefit suspension in Month 46. At that point, it makes no difference whether earnings fall below SGA in a given month (as in Month 47); no benefit is paid until reapplication and reinstatement are undertaken.

The complete loss of benefits when earnings reach or exceed the SGA amount after TWP and GP completion is often called the "cash cliff." The cash cliff creates an incentive to keep earnings below the SGA level—an incentive that is especially strong for those only able to earn somewhat above the SGA amount.

---

[2]   A more detailed description of the current SSDI benefit design appears in Chapter One of the *BOND Design Report.*

[3]   TWP months are shown as consecutive in the exhibit, but need not be; the TWP is completed when nine such months occur over a period of 60 or fewer months. At the beginning of each year, SSA uses the average wage index (AWI) to adjust the TWP income amount for wage growth.

[4]   The GP months are shown as consecutive in the exhibit, but need not be.

Exhibit 1-1.   Timeline for SSDI Trial Work Period and EPE
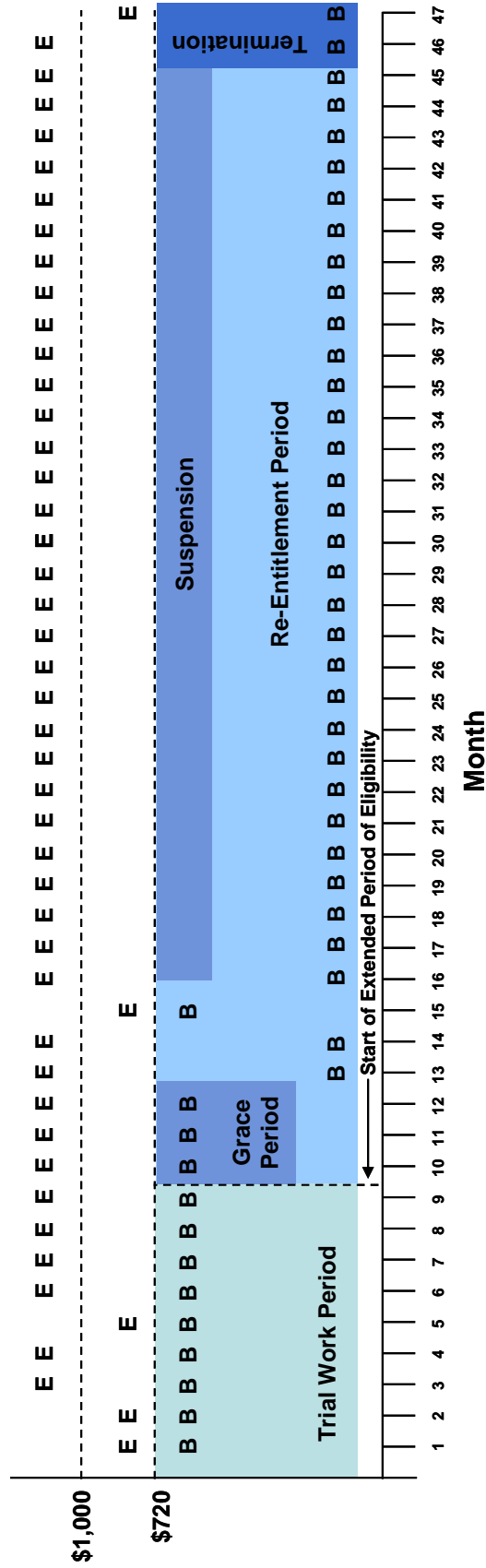
The BOND Reforms and Their Expected Impact

BOND will test an innovation that replaces the cash cliff with a "ramp"— a reduction in the SSDI benefit of $1 for every $2 of earnings above the "BOND Yearly Amount" (BYA)—12 times the monthly SGA amount. Any auxiliary benefits (i.e., those paid to support a dependent family member) will be paid in full if the individual's own benefit is positive, and reduced to zero if not.[5]

It may seem anomalous that, under a benefit offset, a beneficiary would be able to earn above the SGA amount and continue to receive benefits given the medical eligibility criterion for SSDI: inability to engage in SGA by reason of a medically determinable impairment. Under current law, SSA enforces that criterion by suspending and terminating benefits if the beneficiary earns above the SGA amount for a sufficiently long period. It is widely recognized, however, that some beneficiaries are able to return to SGA even though they have not recovered from the impairment under which they first qualified for benefits. With time, beneficiaries adapt to their impairments and some are capable of returning to work, perhaps with the aid of retraining, various employment services, and accommodations. Such beneficiaries might be deterred from returning to SGA by the cash cliff. The intent of the offset is to encourage such individuals in their return to work efforts and reduce, but not eliminate, their reliance on SSDI benefits. The offset is not intended to help those who recover medically from their impairment; their benefits will be terminated under the offset, just as they are under current law.

There can be no guarantee that all beneficiaries assigned to an offset group will gain financially by using it, in large part because of the implications of higher earnings for benefits from other programs. The expectation is, however, that, with rare exceptions, all beneficiaries who use the offset will attain income levels (SSDI benefits plus earnings) that are at least as high, and usually higher, than they would achieve under current law. Specially trained benefits counselors will be available to help ensure that those offered the offset understand its implications for their earnings and benefits, including benefits from SSDI and other programs.

The offer to use the benefit offset during the demonstration is time limited. Treatment subjects will be able to use the offset during a 60-month participation period. This period will begin immediately upon entry into the demonstration for those who have already completed the TWP. For others, it will begin in the month after TWP completion, provided that they complete the TWP by the end of September 2017. (Further detail on the participation period and a number of other significant aspects of how the benefit offset will be administered appears at the end of Section 1.2 and in Chapter Five of the *Design Report*.)

The demonstration will also test another program change: the provision of more intensive counseling, termed Enhanced Work Incentives Counseling (EWIC). Most beneficiaries who receive the BOND offset will be offered Work Incentives Counseling (WIC) (also known as "benefits counseling"), designed to be

---

[5] The vast majority of beneficiaries eligible for BOND are SSDI worker beneficiaries. As discussed further in the *Design Report*, a small share of SSDI workers receives auxiliary benefits. The total monthly benefit is subject to a family maximum. If a treatment subject's total benefit is at the maximum, a reduction in the primary benefit under BOND will not result in an offsetting increase in auxiliary benefits. The other groups that will be eligible for BOND are Disabled Adult Children (DAC) and Disabled Widow(er) Beneficiaries (DWB) of other Social Security beneficiaries. Reductions in their benefits under BOND have no effect on the benefits of others in the primary beneficiary or other auxiliary beneficiaries.

comparable to the counseling that is offered by Work Incentives, Planning, and Assistance (WIPA) grantees to all beneficiaries under current law, but tailored to counsel beneficiaries on the $1 for $2 benefit offset. However, one treatment group will be offered counseling that is substantially enhanced relative to WIC. EWIC is designed to at least partially address other factors that are likely to reduce return to substantial work and SSDI exit for some beneficiaries. Under EWIC, counselors will be able to spend substantially more time helping each beneficiary, and be able to address a broader range of issues. EWIC is expected to increase the impact of the offset by improving beneficiary understanding of how higher earnings will affect SSDI and other benefits, and helping beneficiaries to access medical treatments, employment supports, and job search assistance that they might need to address other obstacles. In addition, by establishing a helpful and trusting relationship with beneficiaries, EWIC is intended to overcome skepticism and distrust about the offset intervention, and thereby make it more likely that individuals will take advantage of the offset to increase their work and income.

The benefit offset is expected to increase the earnings of those who might otherwise keep their earnings below the SGA amount, and, in so doing, increase their household incomes and reduce their benefits. The effect of additional earnings on household disposable income will be partially offset by reductions in SSDI benefits paid (although smaller than would occur under current law) and increases in payroll and income taxes. In addition, there may also be impacts on other household income components such as spousal earnings or private disability payments. At least some beneficiaries who would earn above SGA under current law, despite the cash cliff, will gain from partial benefits under the benefit offset, and some might reduce their earnings to take better advantage of the new benefit design. Hence, introduction of the benefit offset is expected to increase entries onto SSDI and reduce exits from the program.

1.2   Demonstration Design

The design of BOND was developed to support rigorous estimation of the impacts of offering the benefit offset to the entire SSDI beneficiary population. This section describes the features of the design. In brief, 10 large demonstration sites were selected using a randomized process that was designed to ensure that the sites would be nationally representative. With only minor exceptions, all SSDI beneficiaries age 20 to 59 in those sites will be included in the demonstration's samples. Those eligible will be assigned at random to a Stage 1 group that will receive the offset, a Stage 1 control group, or a pool to be solicited as volunteers for Stage 2. (See **Exhibit 1-2**.) Stage 2 volunteers will be randomly assigned to one of two treatment groups or a Stage 2 control group. Some of these groups will be offered the opportunity to receive the offset and counseling services from the demonstration, while others will continue under current law as a research control group.

In what follows, we describe: the definition of a site, the site selection process and the outcome of the process, the assignment of eligible beneficiaries to the various demonstration groups, and administrative aspects of implementing the BOND interventions. Further details and discussion of the rationale for the demonstration's features appear in the *Design Report*.

Exhibit 1-2.   Demonstration's Random Assignment Design
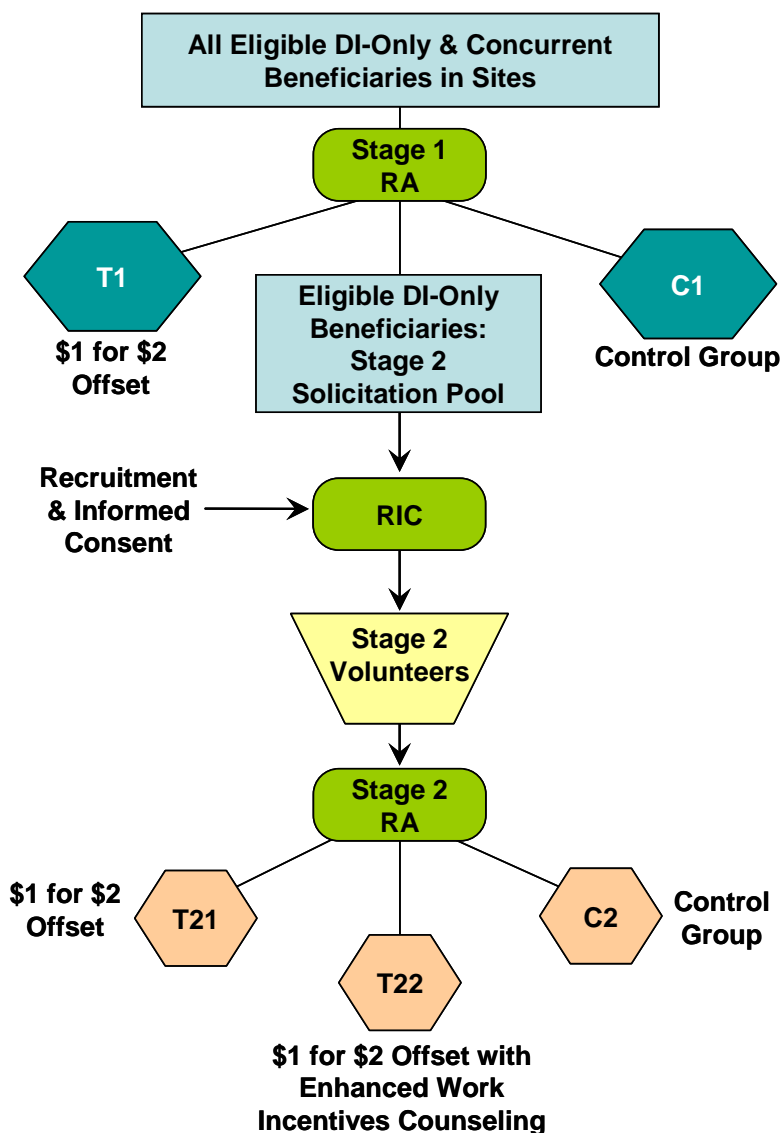
1.2.1.   The BOND Sites and Beneficiary Eligibility

The 10 sites for the demonstration were selected through a process designed to produce a nationally representative set of sites. This section describes the selection process. The first step was to divide the country geographically into the universe of potential sites. The second step was to assign these sites to eight strata, based on criteria designed to support evaluation objectives, and to determine how many sites to select from each stratum. The final step was to randomly select the 10 sites from the eight strata.

Potential sites were defined as the coverage areas of individual SSA Area Offices. Each Area Office supports a group of local SSA Field Offices, and each Field Office is responsible for serving all individuals in its geographic coverage area. Area Offices serve multiple Field Offices over a relatively broad geographic range. Hence, an Area Office's coverage area is the combination of the areas served by

the Field Offices it supports. Coverage areas are large; most Area Offices cover entire states, and some cover multiple states. There were 54 Area Offices in the nation in 2008, and all but one—the office that serves Puerto Rico and the U.S. Virgin Islands—were included as candidates for selection.

The Area Offices were stratified into eight strata, based on two criteria that were developed to support demonstration objectives. Geographic diversity was ensured by stratifying sites into the four Census regions (Northeast, Midwest, South and West). To ensure that sites were representative with respect to access to health insurance coverage under state Medicaid Buy-in (MBI) programs—coverage that may influence work decisions and use of the offset—each regional stratum was divided into "low" and "high" MBI strata, on the basis of availability of MBI coverage to SSDI beneficiaries within the site as of 2008.

SSA randomly selected one site from each of the eight strata, with the exception of the South "low" MBI stratum, from which three sites were drawn. The exception reflects the large number of beneficiaries in that South low-MBI stratum, roughly three times the average the other seven strata. Within each stratum, sites were randomly selected by a methodology that first assigned a probability of selection to each site equal to the share of all beneficiaries in the stratum residing within the site in July 2007 ("probability proportional to size").

The 10 sites are identified in **Exhibit 1-3**. Also shown is the projected number of SSDI beneficiaries eligible for inclusion in the BOND sample from these Area Offices. The vast majority of beneficiaries residing in each site area when the BOND sample is drawn will be included in the BOND samples.

To be eligible to participate in the project, a beneficiary must be:

- At least age 20 and under age 60;

- Entitled to title II benefits based on disability;

- Not in terminated status;

- Residing in one of the 10 Areas for the project (for stage 2) and having a mailing address in one of the 10 Areas for the project based on SSA administrative records (for stage 1); and

- Not currently or previously participating in a treatment or control group of another SSA demonstration.

Exhibit 1-3. **Selected Area Offices in the BOND Sample, by Census Region and Proportion of Beneficiaries Living in Medicaid Buy-in States**

Census Region	Proportion of Beneficiaries in MBI States	Selected SSA Area Offices			
		Office Name/Location	Potential BOND Subjects[a]	Largest Cities	SSA Office Code[b]
Northeast	Low	Northern New England	107,577	Portland, ME; Manchester, NH; Burlington, VT	H03
	High	Western New York	109,235	Syracuse, Buffalo, Binghamton, Rochester, Elmira, Corning, Ithaca	H98
Midwest	Low	Greater Detroit	95,512	Detroit, Dearborn, Ann Arbor, Port Huron	H57
	High	Wisconsin	100,055	Milwaukee, Madison, Green Bay, Racine, Kenosha, Appleton	H51
South	Low	Alabama	142,724	Birmingham, Montgomery, Mobile	H31
		South Florida	150,090	Miami, Ft. Lauderdale, Tampa, St. Pete, Ft. Myers, Sarasota, Naples, W. Palm Beach	H32
		Greater Houston	83,887	Houston, Beaumont, Galveston, Port Arthur	H73
	High	DC Metro	50,666	Washington, DC; Silver Spring & Rockville, MD; Alexandria & Fairfax, VA	H22
West	Low	Colorado, Wyoming	70,070	Denver, Colorado Springs, Boulder, Ft. Collins, Laramie, Cheyenne	H83
	High	Arizona, Southeast California	106,008	Phoenix, Tucson, Flagstaff, AZ; Palm Springs, CA	H0B
Total			1,015,824		

[a]   Based on analysis of beneficiaries ages 20 to 59 on the rolls in December 2008, using the 2008 Ticket Research File, and inflated to projected values for December 2010.

[b]   SSA changed the Area Office reporting structure subsequent to BOND site selection in the Western NY Area Offices by merging the Buffalo Area Office (H98) into the Albany Area Office (H12). The site boundaries for BOND will correspond to the former H98 Area Office, so we have designated the code for this office as H98, even though that code is no longer used to represent the part of the new Albany office (H12) that is included in the demonstration.

1.2.2.   Beneficiary Selection and Random Assignment

The sample of beneficiaries will be drawn just before the start of the demonstration, from a file listing all eligible beneficiaries in the BOND sites. Eligible beneficiaries will be assigned to various demonstration groups in two stages (see **Exhibit 1-4**).

Exhibit 1-4.   BOND Sample Intake Flow and Sample Sizes
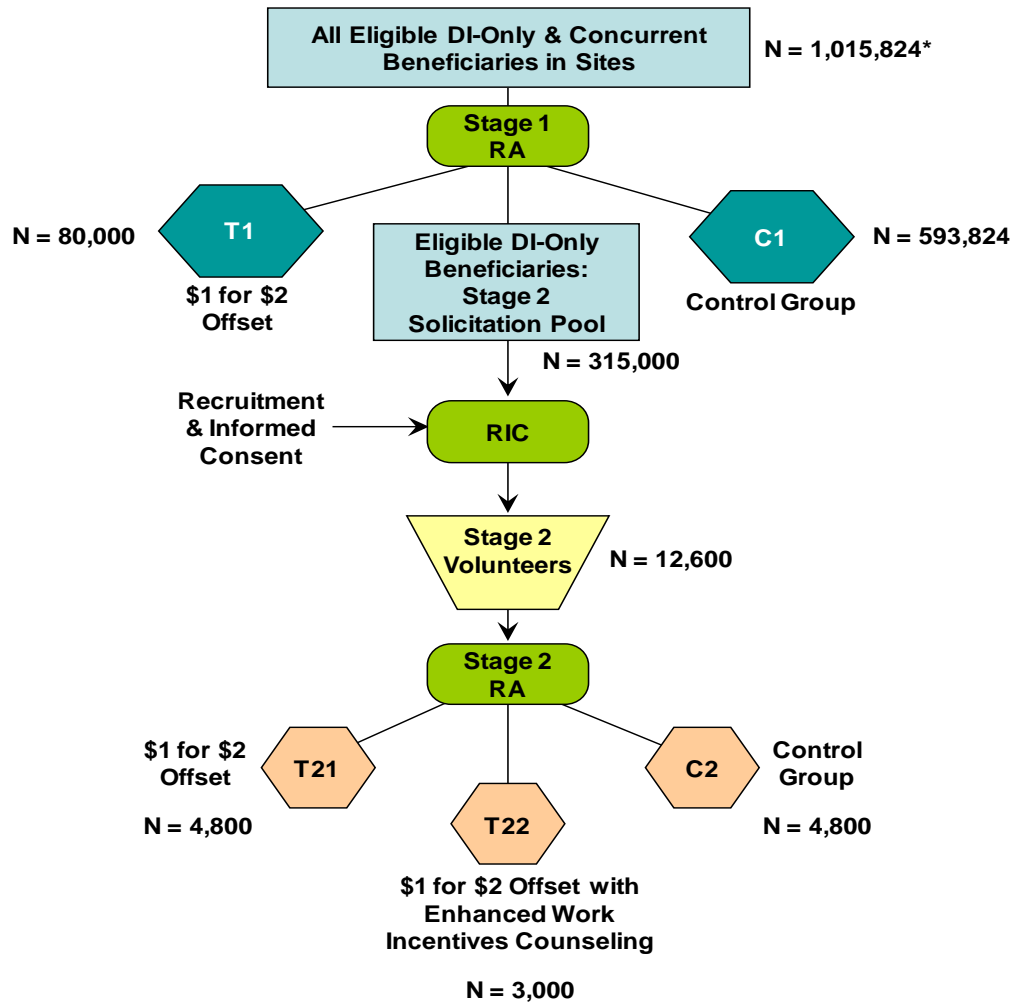
*27,000 SSDI-only beneficiaries from this group will be solicited for Stage 2 participation during the pilot phase of the project.

At Stage 1, the goal is to learn about offset utilization and key impacts when the benefit offset is offered to all SSDI beneficiaries. Hence, all eligible beneficiaries are candidates for assignment to the three Stage 1 groups:

- **T1 subjects, i.e., Stage 1 treatment subjects:** a group that is offered use of the offset;

- **C1 subjects, i.e., Stage 1 control subjects:** a control group that is not offered the offset and that continues under current law; or

- **Stage 2 solicitation pool subjects:** a group from which the demonstration will attempt to recruit volunteers for "Stage 2" random assignment.

Because only a small fraction of T1 subjects offered the offset is likely to use it (perhaps less than 5 percent, and more than 10 percent seems unlikely), the T1 and C1 groups must be very large (tens of thousands) in order to detect policy relevant impacts. These impacts are expected to be quite small on average in the T1 sample, since most members are not expected to experience any impact at all. The sample size for T1 is fixed at 80,000, whereas the size of C1, which is extremely large, will depend on the actual number of eligible beneficiaries when the sample is drawn and how many must be solicited to achieve target sample sizes for Stage 2. (Its size is projected as 593,824.)

Stage 2 random assignment is designed to learn more about the impacts of the benefit offset for those most likely to use it, and to determine the extent to which making significant enhancement of the counseling services available to beneficiaries (EWIC) affects offset utilization and impacts. In two ways, those randomized at Stage 2 will not be a simple random sample of the full SSDI population. First, concurrent SSDI and Supplemental Security Income (SSI) beneficiaries are excluded because the interaction between SSI and SSDI substantially diminishes the value of the SSDI benefit offset (see Chapter Two). Given this interaction, the expectation is that relatively few of those offered the offset would use it. Second, the demonstration will solicit volunteers for Stage 2. As a result, all Stage 2 subjects will be beneficiaries who demonstrate a strong interest in using the benefit offset after having been well-informed about how it works.

The approximated 315,000 SSDI-only beneficiaries in the Stage 2 solicitation pool will be solicited to volunteer via a process described in the *Design Report*. Those who volunteer will be randomly assigned to one of the following three groups after completing an informed consent process and a baseline survey (see Chapter Three):

- **T21 subjects, i.e., Stage 2 offset-only subjects:** a group that receives the $1 for $2 benefit offset only (N = 4,800);

- **T22 subjects, i.e., Stage 2 offset-EWIC subjects:** a group that receives the $1 for $2 benefit offset and EWIC (N = 3,000); or

- **C2 subjects, i.e., Stage 2 control subjects:** a control group that is not offered the offset or EWIC and is subject to current law (N = 4,800).

The sample for all groups will be distributed across sites in proportion to the number of eligible beneficiaries in the site.

The T1 sample and the Stage 1 volunteer sample will be stratified according to the length of time the beneficiary has been on the SSDI rolls at the time of selection: 36 months or less ("short-duration") or more than 36 months ("longer-duration"). Short-duration beneficiaries, constituting about one quarter of all beneficiaries,[6] are expected to be more likely to use the offset than long-duration beneficiaries,

---

[6]   Based on analysis of the Ticket Research File (TRF), 27 percent of all beneficiaries were short-duration beneficiaries in December 2008.

because under current law they are more likely to enter employment and work at higher levels than longer-duration beneficiaries. In addition, sufficient numbers of short-duration beneficiaries are needed to support projections of impacts for the long term, when all beneficiaries would presumably be offered the opportunity to use the offset early in their SSDI spells (i.e., at SSDI entry). At the same time, the samples of long-duration beneficiaries must be sufficiently large to support projections of the initial impacts of a national program, when most beneficiaries will have been on the rolls for many years when first offered the offset.

The T1 sample will be evenly split between short- and longer-duration beneficiaries; short-duration beneficiaries will be oversampled to achieve this goal. We will monitor intake of Stage 2 volunteers into the sample in order to ensure the sampling is evenly split among these groups.[7]

1.2.3.   Implementation

To avoid the many problems encountered in administering the benefit offset in the earlier Benefit Offset Pilot Demonstrations (BOPD)[8] and to minimize the impact of BOND on SSA program operations, the BOND team, rather than SSA, will be responsible for contacting, informing, and delivering many services to Stage 1 treatment subjects and Stage 2 volunteers. SSA retains its adjudicative role in the benefit adjustment and other processes, and will continue to deliver monthly benefit checks to the demonstration subjects.

Because of the complexity of BOND, demonstration functions will be carried out by multiple operational components. These components and their functions are described briefly below. More details on the functions of each component appear in the *Design Report*, especially Chapter Six.

1. **BOND Website:** The BOND website will provide information about BOND to the public, and BOND treatment subjects will have access to obtain additional information pertinent to their group after entering a password. The website will also include: answers to frequently asked questions; BOND program guidance (such as directions to site offices and counselor organizations); and contact information for other demonstration resources.

2. **BOND Call Center:** BOND treatment subjects will have access to call a toll-free number to obtain information about the demonstration, report earnings information, and inquire about any problems they encounter.

---

[7]   As described in Long, Schneider, Elsman, and Feins (2010), the division of the Stage 2 sample between short-duration and longer-duration beneficiaries will be controlled by gradual release of replicate sub-samples. Some of the replicates will contain beneficiaries who have been receiving benefits for 36 months or less as of the date of replicate creation, and others will contain only those on the rolls more than 36 months. As beneficiaries volunteer for random assignment, short- and longer-duration counts will be maintained and—if the longer-duration count is running ahead of the short-duration count—more replicates from the short-duration solicitation pool will be released. The goal is to minimize oversampling from the short-duration pool subject to the constraint that at least as many volunteers come from the short-duration pool as from the longer-duration pool over the course of the pilot and the main demonstration. We will keep SSA informed of the volunteer rates and our efforts to achieve this goal for the Stage 2 sample.

[8]   The BOPD was a four-state pilot test of the offset, designed primarily to assess implementation issues.

3. **BOND Site Offices:** Each of the 10 sites will have a site office which will conduct outreach, recruitment and intake activities for Stage 2. That outreach office will also serve as a resource for both Stage 1 and Stage 2 subjects. Each office will have the capacity to conduct enrollment in all areas of the site. The site offices will be closed after intake is completed.

4. **BOND Counselor Organizations:** In each site, the BOND team will contract with one or more organizations to deliver counseling services to treatment subjects. Individuals within the organizations will be selected and trained to deliver this counseling. Counselors will advise all treatment subjects who seek advice—Stage 1 and Stage 2—on how use of the offset will affect their benefits—and will deliver enhanced services (EWIC) to T22 subjects. To maintain the distinctions in the demonstration design, the counselors who serve T22 subjects will differ from those who serve T1 and T21 subjects.

5. **BOND Processing Center:** The processing center will be responsible for collecting and processing earnings reports from all Stage 2 sample members to support determination of TWP completion, and will continue to collect information from treatment subjects after TWP completion, to support benefit adjustment.

Several administrative aspects of the benefit offset must be considered part of the offset treatment, and, thus, affect how estimates of any treatment differences will be interpreted from a policy perspective. These administrative aspects are described in detail in the *Design Report*. Most of these administrative features were designed to facilitate use of the offset. In brief, they are as follows:

6. **Participation period:** Use of the benefit offset cannot begin until the TWP is exhausted. Treatment group beneficiaries who have completed the TWP at entry into the demonstration will be offered use of the benefit offset for the next 60 months. For others it will begin in the month after TWP completion, provided that they complete the TWP by the end of September 2017. Those who fail to complete their TWP by this date will lose their opportunity to use the offset. Beneficiaries who re-entered SSDI under SSA's Expedited Reinstatement process will be eligible for the offset only after they have completed both the initial reinstatement period, and their new TWP. Any GP months remaining at the start of the participation period must be used up before the benefit offset is applied. Benefits cannot be terminated because of work during the participation period, even if benefits fall to zero because of earnings. Current rules will apply at the end of the participation period; the benefits of those engaged in SGA after this point will be terminated once any remaining GP months have been used.

7. **Annual Accounting:** SSA will use an annual accounting period for purposes of determining the benefit amount under the offset, rather than the monthly period used under current law. Benefits will continue to be paid monthly, however. Annual accounting may be an advantage to some beneficiaries with variable monthly earnings, because earnings below the SGA amount in some months will at least partially cancel out earnings above the SGA amount in others for purposes of benefit determination. However, beneficiaries with highly variable earnings could be disadvantaged by the annual accounting period, though the frequency of such an occurrence is expected to be very low.[9]

---

[9] For example beneficiaries with earnings just below the SGA amount in some months and well above the SGA amount in other months would for the year exceed the annualized SGA amount and have benefits reduced in all

8. **Earnings Estimates and Annual Reconciliation:** To use the benefit offset, treatment beneficiaries must provide rest-of-year earnings estimates to the BOND Team when they first enter the participation period, and at the beginning of each subsequent calendar year. At the end of each year, SSA will compare the earlier estimate to earnings reported to the Internal Revenue Service (IRS). To facilitate this comparison, SSA has adopted IRS accounting rules for determining annual earnings, a change from current SSA rules.

9. **Ticket to Work Outcome Payments:** As described more completely in the *Design Report*, Ticket-to-Work (TTW) is a program under which SSA makes performance-based payments to qualified public and private providers—Employment Networks (EN)—that help beneficiaries return to work. Normal TTW payment rules will apply to treatment subjects that assign their Tickets except that SSA will make outcome payments to ENs for months in which subject clients have their benefits reduced because of the benefit offset, provided that the EN submits an appropriate claim. The current requirement that cash benefits not be payable during the month will be waived.[10]

10. **Earnings Reporting, TWP Determination, and Benefit Adjustment Processes:** The BOND Team will facilitate treatment subject reporting of earnings to SSA for purposes of TWP determination and benefit adjustment. A dedicated office at SSA headquarters will complete the work continuing disability reviews (work CDRs) required to determine the month in which a beneficiary completes the TWP. SSA has also developed a highly automated process to adjust benefits under the offset.

11. **Assistance in Use of the Benefit Offset:** Treatment subjects will have access to assistance in use of the benefit offset from BOND Site offices, the BOND Website, and the BOND Call Center, as well as from benefit counselors. For those in T1 and T21, the available counseling will be comparable to that available to other beneficiaries, but the counselors will have been trained on use of the benefit offset. Those in T22 will receive EWIC that also provides information on the benefit offset.

Other SSDI rules that might have a bearing on the employment decisions of beneficiaries remain in effect for both treatment and control subjects. Most notably, current rules for medical CDRs, the Medicare extended period of eligibility (Medicare EPE), and SSI will remain in effect for all BOND treatment and control subjects.[11]

Because the above administrative procedures do not apply to Stage 1 control subjects (C1), Stage 1 impact estimates will reflect the impact of the benefit offset accompanied by all of these features relative

---

months as a result. It is expected that such occurrences will be relatively rare in that most beneficiaries do not have large fluctuations in earnings above the SGA level from month to month.

[10] In the absence of this last change, providers would be disadvantaged when serving clients in the offset earnings range (i.e., on the "ramp" and not at full benefit cessation).

[11] A medical CDR is a review of the medical status of the beneficiary, and can lead to benefit termination because of medical recovery. SSDI beneficiaries are automatically eligible for Medicare in the 25th month after entitlement to SSDI. The Medicare EPE is a period of at least 93 months after TWP completion during which Medicare benefits continue, and continues indefinitely as long as SSDI benefits are not terminated. Further details appear in the *Design Report.* SSI rules are discussed in Chapter Three.

to current law as currently administered. Stage 2 control subjects will be able to use one of the administrative features described above: expedited TWP determinations, including assistance in the reporting of earnings for this purpose. In addition, all Stage 2 subjects will be volunteers seeking the benefit offset. Hence, the Stage 2 impact estimates involving comparisons of either T21 or T22 subjects to C2 subjects will reflect the impact of all of the administrative features of the demonstration other than expedited TWP determinations on informed volunteers.

1.3   Evaluation Overview

The goal of the BOND evaluation is to produce information that policymakers, administrators and others can use to improve SSDI work incentives and counseling services. Specific objectives are to:

- Estimate the impacts of the SSDI benefit offset, as implemented in the demonstration, on key beneficiary outcomes: earnings, benefits received, exits from SSDI, household disposable income, and other indicators of personal wellbeing;

- Estimate the incremental impacts of adding enhanced work incentives counseling services, as implemented in the demonstration, to the offset;

- Assess the costs and benefits of national implementation of an SSDI benefit offset, as implemented in the demonstration, from the perspectives of: society as a whole, beneficiaries, the SSDI Trust Fund, the federal budget, and state budgets;

- Identify how impacts vary with characteristics of beneficiaries and their environments, as well as aspects of the interventions and their implementation that help explain variation in impacts;

- Identify and assess ways to improve the design and implementation of the benefit offset and EWIC services; and

- Predict the impacts of alternative configurations of a benefit offset policy (i.e., not the specific benefit offset approach tested in the demonstration) on key national outcomes, including earnings, federal and state program expenditures, and federal and state tax revenues.

The evaluation will draw on the following data sources:

- Administrative data from SSA and other agencies, including the Centers for Medicare & Medicaid Services (CMS) and the Rehabilitation Services Administration (RSA);

- Survey data gathered by interviewing Stage 1 and Stage 2 subjects;

- Data from the BOND Operations Data System (BODS), which includes information on random assignment; demonstration outreach, recruitment, and intake; beneficiary earnings (collected for benefit determination purposes); and additional operational information accessed through an interchange between BODS and SSA's data systems; and

- Qualitative data from site visits, document reviews, interviews with key stakeholders, and focus groups.

The evaluation has four major analytic components:

- The **process** evaluation will examine all aspects of project implementation and operations to assist SSA in three realms, understanding and interpreting project results, planning for potential implementation of BOND's features in the national SSDI program, and identifying ways that the interventions and their implementation might be modified to improve program outcomes.

- The **participation** evaluation will examine the extent to which beneficiaries actively engage in the offered innovations, and how their participation experience compares to the experience intended. Key outcomes are the extent to which subjects actually use the offset and counseling services when offered, measures of how well the benefit adjustment process functions (e.g., the timeliness and accuracy of earnings reports and benefit adjustments, and the frequency and size of underpayments and overpayments), ease of access to counseling services, and perceived usefulness of counseling services. The participation evaluation will also examine the extent to which beneficiaries work, enroll for employment services, and/or complete the TWP.

- The **impact** evaluation will measure the effects of the BOND interventions on beneficiary outcomes by comparing outcomes for those in each of the various BOND treatment groups to the outcomes of those in the corresponding control group. The evaluation will produce estimates of the impacts of offering the benefit offset, as implemented in the demonstration, as well as estimates of any incremental impacts when EWIC is offered to treatment subjects in addition to the offset. The key outcomes to be examined in the impact analysis are employment, earnings, benefits, and household income. The impact evaluation will also look at a broader range of outcomes, including health status, functioning level for activities of daily living, taxes paid, and benefits from other programs. To the extent feasible, the findings from the impact evaluation will be used to project outcomes under national implementation for multiple variants of a benefit offset, via a simulation model discussed in Chapter Six.

- A **benefit-cost** study will measure and compare the costs and benefits of various demonstration treatments, relative to each other and to the current program, from multiple perspectives including society as a whole, beneficiaries, taxpayers, and SSA.

The findings from these analyses will be presented in a series of evaluation reports, beginning in 2011. The evaluation's final report is scheduled to be released in 2018.

1.4   Document Overview

The remaining chapters of this report provide the details of the evaluation analysis plan. Chapter Two describes how the evaluation will build on a long history of research on addressing work disincentives that arise when paying cash benefits to individuals facing employment challenges, presents the theoretical model that will guide the evaluation, and discusses what theory predicts about BOND impacts. Chapter Three describes the data upon which the evaluation will draw. Chapters Four, Five, Six and Seven present the plans for the four major components of the evaluation: process, participation, impact and cost-benefit analyses. Chapter Eight describes how the findings from the evaluation's four major components will be integrated for purposes of addressing major evaluation questions. Chapter Nine concludes the report with a description and timeline of planned evaluation reports.

Chapter Two.   Conceptual Foundation

This chapter presents the conceptual foundation for the evaluation of BOND. It begins with a presentation of the economic theory of how benefit design affects SSDI beneficiaries' employment and earnings choices. It then uses that theory to derive hypotheses for the effects of replacing the "cash cliff" with the benefit offset "ramp." The subsequent section reviews empirical evidence from prior efforts to enhance work incentives in transfer programs targeted to individuals with employment challenges, both within the SSDI program and outside of it. This is followed by a summary of the predictions of the theory and their consistency with existing empirical evidence, if available. The chapter concludes with a logic model that emerges from these theories and that guides the development of the different evaluation components through the rest of this Analysis Plan.

2.1   Theory

BOND is motivated by a simple economic intuition. The "cash cliff" in the SSDI program (described below) creates a strong incentive for SSDI beneficiaries to keep earnings below the SGA amount. Sustained earnings above that amount results in suspension, and eventually termination, of SSDI benefits.

That incentive is problematic for two reasons. First, it discourages beneficiaries from being as productive as they can be, despite their disabilities. As advances in medicine and technology make it possible for individuals with very significant impairments to be quite productive, it seems likely that the SGA cliff will discourage increasing numbers of beneficiaries from working. Second, if SSDI beneficiaries worked more they might lower the benefits they receive and therefore the cost of the program. Although even under current law (i.e., with the cash cliff) a substantial number of beneficiaries work their way off the program, many more work and retain their full benefits because their earnings are below the SGA amount. Perhaps if we changed the benefit structure to encourage higher earnings by allowing beneficiaries to keep some, but not all, of their benefits when they earn more than the SGA amount, their earnings would increase and benefit costs would fall. That is the intuition behind BOND and the motivation for the test. As will be seen below, however, there is no guarantee that the benefit offset will increase average earnings for existing beneficiaries, and even if it does, average benefits might increase because fewer beneficiaries will leave the rolls for work. Empirical evidence from other demonstrations suggests that this outcome might well occur.

In what follows, the neoclassical economic model of transfer payments is applied to SSDI beneficiaries in order to derive predictions with respect to the introduction of the benefit offset to be tested under BOND.[12] Section 2.1.1 focuses on SSDI-only beneficiaries and ignores several features of SSDI, other programs, and taxes that have implications for predicted impacts: work-incentive counseling, Impairment Related Work Expenses (IRWE), auxiliary benefits, Ticket to Work and how it will be modified for BOND treatment subjects, annual accounting under BOND versus monthly accounting under current law, income and payroll taxes, and income and in-kind benefits from other sources. Section 2.1.2 applies the neoclassical model to the more complex case of concurrent beneficiaries. Section 2.1.3 considers the implications of the features of SSDI that are neglected in the initial presentation, and Section 2.1.4

---

[12]   See Hoynes and Moffitt (1996, 1999) for earlier consideration of the theoretical impacts of replacing current-law benefits with a benefit offset.

considers the implications of taxes and other programs. Section 2.1.5 considers the implications of several ways in which the demonstration necessarily differs from a fully-implemented program: the opportunity for non-beneficiaries to enter SSDI and use the offset, outreach and recruitment, time limits, and the processing of earnings reports and benefit adjustments. The section concludes with a summary of the theoretical predictions.

2.1.1   The Neoclassical Labor Supply Model and Its Predictions for SSDI-only Beneficiaries

The core of BOND is a change in the way that SSDI benefits vary with earnings once a beneficiary has completed the TWP and grace period. **Exhibit 2-1** displays the change for such a beneficiary graphically. For simplicity of comparing the benefit offset to current law, the presentation assumes that monthly earnings are constant throughout the year; all values in the exhibit are annual.[13] The simple version of the neoclassical model assumes that every person has a wage, w, at which they could work any number of hours that they might choose. **Exhibit 2-1** demonstrates these potential earnings with various hours by the dotted line through the origin, with slope "w."

Exhibit 2-1.   The Effect of BOND on the Earnings and Benefits of an SSDI-only Beneficiary with Earnings under Current Law Just Below BYA
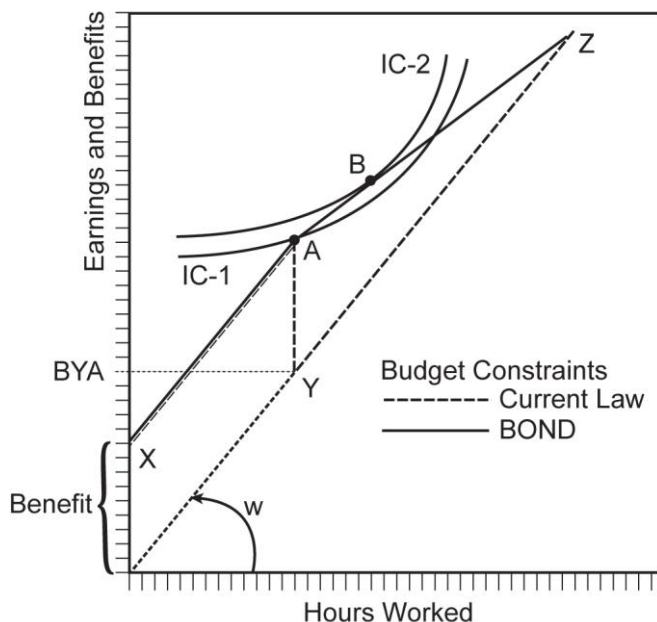
Total household income is given by the sum of SSDI benefits and earnings, assuming no other income source. At zero hours worked (and therefore zero earnings), the beneficiary receives his/her full SSDI benefit—point "X" on the vertical axis.

Now consider what happens as hours increase. At low levels of hours worked, the SSDI benefit is unchanged as earnings increase, so total income increases by "w" for each hour worked. In this range, total income is the sum of earnings and the full SSDI benefit. This is illustrated by the dashed diagonal

---

[13]   Section 2.1.3 discusses the effect of the change from monthly to annual accounting.

line from point "X" through point "A." Once total earnings slightly exceed the BOND Yearly Amount (BYA), the current-law SSDI benefit drops to zero, and total income drops from the sum of earnings and the SSDI benefit to earnings alone (i.e., point "Y"). This drop is often called the "benefit cliff."

Clearly this benefit structure creates a strong disincentive to work. For those with earnings near BYA, working slightly more hours actually causes a drop in income. Why work more?

BOND replaces the cash cliff with a "ramp." It is the intention of BOND that this switch from a cliff to a ramp will increase work and earnings and reduce reliance on cash benefits. The solid line in **Exhibit 2-1** illustrates how total income would vary with hours worked under BOND. For earnings below BYA (i.e., below point "A"), total benefits and therefore total income under BOND are identical to total benefits and total income under current law. Thus, the solid line (for BOND) and the dashed line (for current law) are identical.

The difference between current law and BOND occurs for hours to the right of point "A" and earnings above BYA. Whereas current-law benefits fall to zero at point "A," the BOND benefit offset reduces the benefits by \$1 for every \$2 of additional earnings until benefits are zero, at point "Z." Hence, the solid line to the right of point "A" has a slope equal to half of "w." Under the BOND offset, income rises continuously with earnings. The benefit offset eliminates the cash cliff's strong disincentive to work slightly more than the hours corresponding to point "A."

The neoclassical model illustrates these choices more explicitly through "indifference curves"; where an individual is indifferent between all combinations of hours and income along a given indifference curve (thus the name). Indifference curves up and to the left—i.e., more income and less work—are preferred. It follows that individuals will choose the point at which an indifference curve just touches the budget line or some "kink" in the budget line. If the indifference curve crossed the budget line, there would be some other indifference curve which would be preferred and which just touched the budget line.

The predicted impacts of the change from current law to the BOND benefit offset will depend on what the beneficiary's earnings would be under current law. The two indifference curves (IC-1 and IC-2) in **Exhibit 2-1**, illustrate the first of four cases to be considered. This is the case that appears to most directly motivate the design of BOND. Under current law, this beneficiary chooses to work hours essentially equal to those represented by point "A," essentially earning BYA.[14] Working any more hours would cause this person's SSDI benefit to drop to zero, meaning a sharp drop in total income. More formally, the indifference curve IC-1 just touches the kink in the current law budget constraint at point "A." Given the beneficiary's preferences for work and income, point "A" is the best point attainable.

Now consider this same beneficiary's choice under the BOND benefit offset. The BOND budget constraint includes the ramp. The second indifference curve IC-2 just touches the BOND budget constraint (formally, this is a tangency). Note that this indifference curve (IC-2) is everywhere above and

---

[14]   It would be rare for an individual to earn exactly BYA. As earning just a little more than BYA under current law bears the risk of complete loss of benefits, one might expect the beneficiary to earn a little less than BYA as a matter of caution. See Blundell and MaCurdy (1999) for further discussion of why individuals having similar kinks in their budget constraints are rarely found to have earnings at the kink points, even when neoclassical theory predicts that they would.

to the left of the other indifference curve (IC-1). Thus, this individual prefers any point on IC-2 to any point on IC-1.

Finally, note that the actual point chosen is "B." At that point, hours of work are higher, total income is higher, and the BOND benefit is smaller than at point "A" (though larger than it would have been at these hours under current law; i.e., zero). For this beneficiary, the predicted impact of the change to the BOND benefit offset is just as desired: higher earnings, lower benefits, and higher beneficiary income.[15]

The predictions of the neoclassical model for the beneficiary illustrated in **Exhibit 2-1** are summarized in the "current-law earnings just below BYA" column of **Exhibit 2-2**. The model predicts that, compared to current law, under the BOND benefit offset: all will continue working, more will earn above BYA, all will continue to receive SSDI benefits, mean annual earnings will be higher, mean annual benefits will be lower, and mean income will be higher.

Exhibit 2-2.   Predictions of the Neoclassical Model with No Fixed Cost of Work or Minimum Hours Constraint

	All Subjects	Current-law Earnings			
		None	Well below BYA	Just below BYA	Well above BYA
Percent with annual earnings above BYA	+	0	0	+	0
Percent receiving an SSDI benefit	+	0	0	0	+
Mean annual earnings	?	0	0	+	-
Mean annual SSDI benefits	?	0	0	-	+
Percent employed	0	0	0	0	0
Mean annual income (earnings + benefits)	+	0	0	+	+
Percent completing TWP and GP	+	0	0	+	0
Quality-of-life indicators	?	0	0	?	?

The last row in **Exhibit 2-2** shows predictions of impacts on "quality of life" indicators for this group. The premise of the neoclassical model is that well-informed beneficiaries will, if they can, translate the opportunity to use the offset into a higher level of wellbeing from their own perspective. The fact that

---

[15]   The increase in earnings has two components (not differentiated in the diagram). The *substitution effect*, which is unambiguously positive, reflects the change in the rate at which an additional hour of work is converted to income at point "A": from a drop in income equal to the size of the current benefit minus an hour's worth of earnings, "*w*", to an increase in income equal to half of "*w*" under the benefit offset. The payoff to additional time spent working increases relative to the unchanged opportunity cost of work (the latter at point "A" is the slope of IC-1), inducing an increase in effort. The *income effect* might be positive or negative, but is often assumed to be negative. Under the offset, the beneficiary can attain a higher level of income than under current law at any number of hours above SGA and below the point where earnings are equal to three times benefits. If activities other than paid work, in total, are "normal" in the economic sense that exogenous increases in income lead to an increase in their consumption, the income effect will be negative. For the beneficiary depicted, the income effect, if negative, cannot be larger in magnitude than the substitution effect; i.e., the hours choice that maximizes utility under the offset cannot be less than the hours choice that maximizes income under current law.

beneficiary behavior changes under the benefit offset, combined with the fact that the offset does not prevent the beneficiary from maintaining the same earnings and benefit combination that the beneficiary would choose under current law, implies that the beneficiary is better off under the offset.[16] Hence, the model predicts that, if the beneficiary is well informed, the beneficiary's quality of life will increase.

This quality-of-life prediction does not necessarily mean that any indicator of quality of life will increase, however. The impact of the benefit offset on such indicators will depend on the tradeoffs that beneficiaries are willing to make between various aspects of quality of life. The quality of life indicators to be considered in the evaluation include self-assessed health status and reports of material hardship (e.g., going hungry); see Chapter Six. It might be, for instance, that some beneficiaries are willing to accept poorer health as a consequence of greater work effort because of the higher income such effort now affords. Hence, the model predicts that such indicators will change, but the sign of the predicted mean impacts for such indicators is ambiguous.

The case illustrated in **Exhibit 2-1** is not the only relevant one, however. Three additional cases are illustrated in **Exhibit 2-3,** corresponding to the three additional columns for current-law earnings in Exhibit 2-2. The indifference curves furthest to the left are for a beneficiary who chooses not to work under current law, at point "C." For this beneficiary, the opportunity cost associated with the first hour of labor—the reservation wage—is higher than the offered hourly wage rate. The introduction of the benefit offset does not affect this beneficiary's choice; the indifference curve passing through point "C" remains the highest indifference curve that the beneficiary can reach. Hence, the predicted impacts for each outcome under the column for those with no current-law earnings in **Exhibit 2-2** are all zero.

The next pair of indifference curves to the right is for a beneficiary that chooses to work well below BYA under current law, at point "D." Introduction of the offset has no effect on the earnings and benefits of this beneficiary either; it offers no opportunities that are preferred to the option preferred under current law. Hence, the predicted impacts for each outcome under the column for those with current-law earnings well below BYA in **Exhibit 2-2** are all zero.

The last pair of indifference curves is for a beneficiary who, under current law, would choose to leave the rolls after TWP completion by earning the amount corresponding to point "E", well above the BYA, even though the individual still has the medical condition that is the basis for SSDI entitlement (i.e., the beneficiary is managing to engage in SGA, despite that condition).[17] For this beneficiary, the best option

---

[16] One might argue that, under the offset, beneficiaries have lost the option of having their benefits suspended when their earnings are just above SGA during the re-entitlement period, but they could always throw their benefit check away should they see that as a preferable result. This statement also ignores the possible effects of the switch from the monthly accounting under current law to annual accounting under the offset. As discussed later in the chapter, this change could leave beneficiaries with possible, but likely rare, patterns of variable monthly earnings worse off under the benefit offset.

[17] If the beneficiary started to engage in SGA because of improvement in his or her medical condition, SSA might discover that fact via a medical continuing disability review (medical CDR). If so, SSA would terminate benefits because of medical improvement, even if the beneficiary had not completed the re-entitlement period. This rule will not be waived for the demonstration.

changes from point "E" under current law to point "F" under BOND; i.e., the introduction of the benefit offset induces a reduction in earnings and an increase in benefits.[18] Total income also increases.

Exhibit 2-3.   **The Effect of BOND on the Earnings and Benefits of Other Illustrative SSDI-only Beneficiaries**
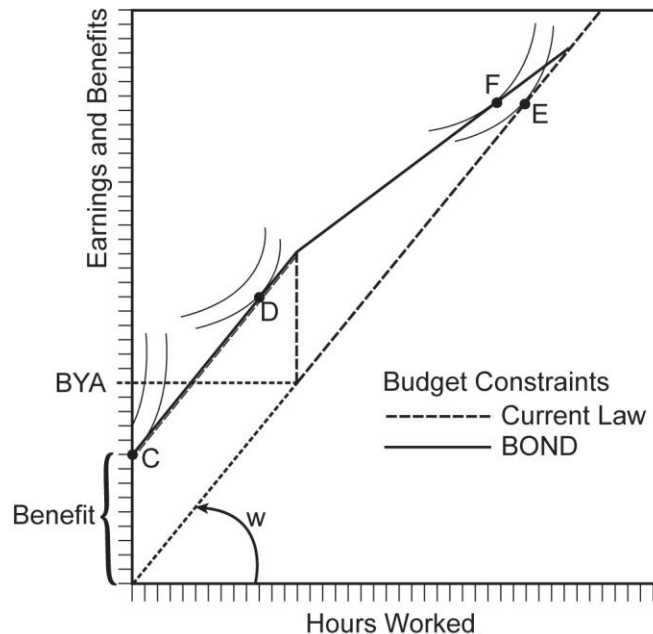
Thus, the last column in **Exhibit 2-2**, for those who would earn above BYA under current law, shows an increase in the percent with benefits, an increase in mean benefits, a reduction in mean earnings, and changes in quality-of-life indicators of ambiguous sign. Although the model predicts a drop in mean earnings, it also predicts that earnings will not fall below BYA, because the BOND benefit offset does not change the budget constraint for earnings below BYA; if the beneficiary prefers a point below BYA under the BOND benefit offset, he or she would also prefer this point under current law.

The model does not imply that all beneficiaries who would leave the rolls for work under current law would necessarily remain on the rolls under the benefit offset; some (not shown) might achieve earnings that are so high above the point where benefits are zero under a benefit offset that there is no level of earnings below that point where the budget constraint under the offset touches a higher indifference curve. Others might lose eligibility because of medical recovery, just as they would under current law.

The first column in **Exhibit 2-2** shows the predicted signs of mean impacts for all beneficiaries. Most importantly, the predicted signs for mean earnings and mean benefits are ambiguous because of the countervailing signs to the predictions for those who, under current law, would have earnings just below

---

18   The change again represents the sum of substitution and income effects. The payoff to additional earnings declines, from $1 dollar for every dollar of additional earnings to 50 cents, while the opportunity cost of paid work at point "E" is unchanged, inducing a reduction in earnings (substitution effect). The income effect reinforces the substitution effect if activities other than paid work are, in the aggregate, normal.

BYA and those who would have earnings above BYA. Some predictions for all beneficiaries do not have ambiguous signs, however. The percentage earning more than BYA, the percentage with positive benefits, and mean total income are all predicted to increase.

Statistics on the numbers in the "earnings just below BYA" (excluding those who do not work at all) and "earnings above BYA" groups are not readily available. Available statistics, all of which are monthly rather than annual, do not distinguish between those who have completed their TWP plus GP and those who have not. Available statistics on earnings (not differentiated by TWP/GP status) do suggest, however, that the number earning above BYA is not trivial relative to the number earning below BYA. Stapleton et al. (2010b) estimated that the benefits of about 2.7 percent of all SSDI beneficiaries (including concurrent beneficiaries) or former beneficiaries were in suspense or had been terminated because of work in the typical month of 2006, but were not able to confirm that all those in terminated status were engaged in SGA. Livermore et al. (2009) report that 10.1 percent of SSDI-only beneficiaries were working when interviewed for the 2006 National Beneficiary Survey, including 2.2 percent with monthly earnings above SGA. We have not found recent statistics on the percentage with earnings just below the SGA amount, but it can be no larger than the percentage of SSDI-only beneficiaries with earnings below SGA—8.9 percent for SSDI-only beneficiaries in 2006.[19]

Changes in two assumptions of the basic neoclassical model have important effects on the model's predictions. One of these assumptions is that there is no fixed cost of work; take home pay is the product of hours and the wage rate, and the beneficiary does not bear any costs because of work that are unrelated to hours worked. To the contrary, fixed costs might be substantial.[20] Transportation costs are typically cited as a fixed cost, and might be particularly high for some beneficiaries. An assistive device that might be critical for work, but not for other activities (e.g., a scooter instead of a manual wheelchair), is another potentially important example.

The introduction of a fixed cost into the model leads to the prediction that some who would not work under current law would work under the BOND benefit offset, and receive lower benefits. This is illustrated in **Exhibit 2-4**. The fixed cost of work shifts all earnings and benefit lines downward except at the point "A," where the beneficiary does not work. Under current law, the beneficiary chooses not to work (point "A") because that places her/him on the highest possible indifference curve (IC-1). But under the offset the beneficiary can obtain a higher indifference curve by earning more than BYA (point "B"). The financial gain from work at a relatively high earnings level under the offset more than compensates for the fixed cost of work.

---

[19]   See Livermore et al. (2009).

[20]   See Blundell and MaCurdy (1999) for further discussion of fixed costs.

Exhibit 2-4.   **The Effect of Fixed Costs of Work on Employment under Current Law and the BOND Benefit Offset**
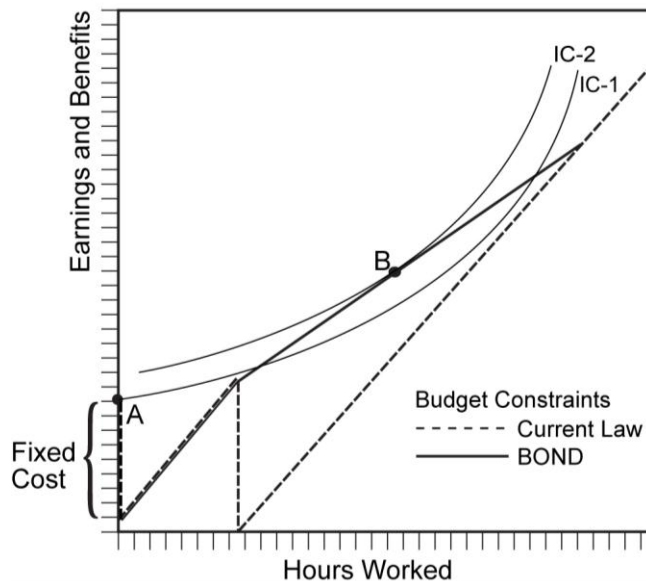
A similar result emerges if we drop the assumption that the individual's wage offer is unrelated to hours worked.[21] It is often the case that full-time jobs pay more per hour than part-time jobs, because of fixed costs to the employer and possibly other factors. In addition, labor laws require that hourly jobs pay higher wages for overtime hours. **Exhibit 2-5** illustrates this idea by augmenting the earnings schedule for the job with no minimum hours requirement that appears in the earlier exhibits with a second earnings schedule for a high-wage job with a minimum hours requirement, H_m, that makes earnings exceed BYA. The exhibit also depicts the preferences of an individual who would not work under current law, in either job, but who would work in the high-wage job under the offset. Under current law, the highest indifference curve attainable is IC-1, at point "A." All points on the earnings schedule for the high-wage job, starting at H_M, are below IC-1. Under BOND, however, the partial benefits available if the beneficiary accepts the high-wage job and works the minimum number of hours are on a higher indifference curve, IC-2, at point "B". Thus, the relatively high wages of this job are not sufficient to induce the individual to work under current law, because of the attendant benefit loss, but they are sufficient under the offset, because the benefit loss is smaller.

Thus, either fixed costs of work or opportunities to obtain higher hourly wages by working longer hours could lead to increases in employment and earnings above BYA for those who would not work under current law (**Exhibit 2-6**). Opportunities to obtain higher hourly wages by working longer hours could also lead to increases in earnings above BYA for those who would work but earn less than BYA under current law. These are all effects that are not predicted by the simple neoclassical model absent fixed costs of work and a minimum hours constraint (**Exhibit 2-2**). Such effects will make it more likely that the overall impact on mean earnings is positive and the overall impact on mean benefits is negative, but they provide no guarantee that mean earnings for all subjects will increase or that mean benefits will decline. With the addition of either or both of these features to the neoclassical model, the "All Subjects"

---

[21]   See Blundell and MaCurdy (1999) for further discussion of non-linearity in wage offers.

column shows positive overall impacts on employment, the percentage with earnings above BYA, and mean income. The model also continues to predict a positive overall impact on TWP/GP completion, as those with no earnings or earnings well below BYA under current law exceed BYA under the benefit offset. The predicted increase in the percentage receiving SSDI benefits also remains in place. Finally, the predicted impacts on quality–of–life indicators continue to be ambiguous. As there are no countervailing effects for other groups, these predictions also apply to all beneficiaries.

Exhibit 2-5.   The Effect of a Minimum Hours Constraint for a Relatively High Wage Job on Employment under Current Law and the BOND Benefit Offset
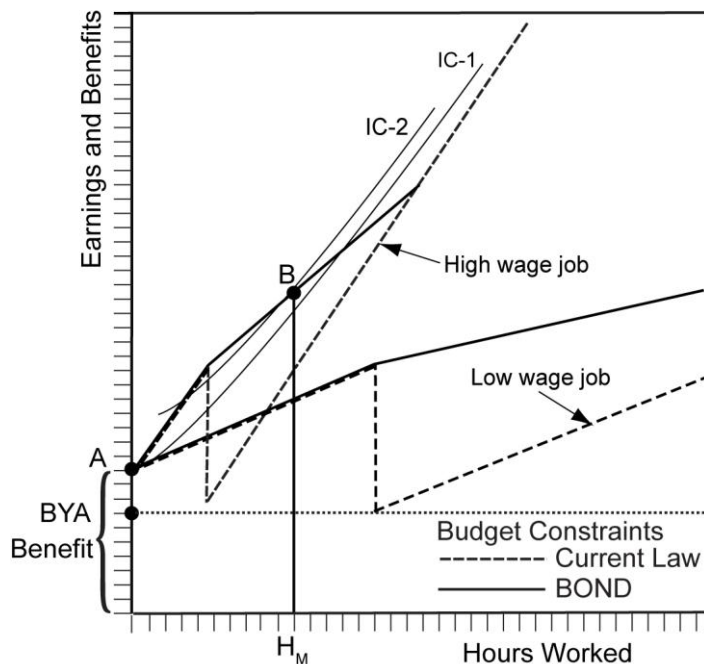
Exhibit 2-6.   Predictions of the Neoclassical Model with Fixed Costs of Work and/or a Minimum Hours Constraint for High-Wage Jobs

	All Subjects	Current-law Earnings			
		None	Well below BYA	Just below BYA	Above BYA
Percent with annual earnings above BYA	+	+	+	+	0
Percent receiving an SSDI benefit	+	0	0	0	+
Mean annual earnings	?	+	+	+	-
Mean annual SSDI benefits	?	-	-	-	+
Percent employed	+	+	0	0	0
Mean annual income (earnings + benefits)	+	+	+	+	+
Percent completing the TWP and GP	+	+	+	+	0
Quality-of-life indicators	?	?	?	?	?

2.1.2   The Neoclassical Labor Supply Model and Its Predictions for Concurrent Beneficiaries

Concurrent beneficiaries will have the same SSDI benefit offset under BOND as SSDI-only beneficiaries, but the impact of BOND is likely to be different. This is because SSI has a dollar-for-dollar offset with SSDI; i.e., every additional dollar of SSDI benefits reduces SSI benefits by one dollar. This is best understood by considering the effect of the BOND offset on the SSI benefits of a concurrent beneficiary with earnings at a specific level above BYA. Under current law, the SSDI benefit for this beneficiary would be zero.[22] As will be demonstrated below, if the (annual) SSI benefit payable at that earnings level under current law *is larger than* the SSDI benefit under BOND, then the BOND benefit at the level of earnings will reduce the SSI benefit paid by an amount that is as large, or almost as large, as the BOND benefit.[23] That is, the sum of SSDI and SSI benefits under the SSDI benefit offset will be higher under the BOND benefit offset than under current law by only an insubstantial amount, if at all. If, however, the current law SSI benefit payable at the same level of earnings *is less than* the SSDI benefit under BOND by more than a small amount, total benefits under the benefit offset will be greater than under current law by a substantial amount. The main implication of this interaction between the two programs is that concurrent beneficiaries stand to gain less than SSDI-only beneficiaries from the BOND benefit offset, other things constant.

Exhibit 2-7 depicts the annual budget constraint for a concurrent beneficiary under both current law (again assuming constant monthly earnings) and the BOND benefit offset. The current-law budget constraint (dashed line) is complex. If the beneficiary does not work and has no income other than SSDI and federal SSI, total annual income—earnings plus benefits—under current law is 12 times the sum of the monthly federal SSI maximum ($674 for an individual in 2010) and $20, and the SSI benefit is the difference between this value and the smaller SSDI benefit. Until annual earnings exceed 12 times $65 (point "A")—the SSI earnings disregard—each dollar of wages increases income by one dollar. Above this amount, each additional hour of work increases earnings by half of the wage rate, "*w*," because half of additional earnings are counted against the SSI benefit amount; the SSDI benefit remains the same as long as hours are below the level that produces earnings above BYA. At point "B," the SSI benefit is zero. As hours at "B" do not represent SGA for this individual, to the right of "B" income again rises by "*w*" per hour worked until BYA is attained (point "C"). For hours above SGA, SSDI benefits go to zero under current law, but SSI benefits partially replace the lost SSDI benefits for this individual. At point "D," the SSI benefit is the federal maximum, $1,020 (12 times $85, including the earnings disregard plus the other income disregard) minus half of earnings above $1,020. The result is that the height of the benefit cliff at SGA, from "C" to "D," is smaller than it would be if the individual were not eligible for

---

[22]   This individual's SSDI benefits would be suspended for SGA, and would eventually be terminated under current law were SGA to continue.

[23]   The SSI reduction in this case might be less than the SSDI benefit increase by as much as $120 ($10 per month), because of the SSI income disregard. The first $20 of any income is not counted in the SSI benefit computation. The effect of the SSDI benefit under the offset will depend on how this disregard would be used under current law. Under current law the disregard might be applied to the earnings of a concurrent beneficiary with earnings above the SGA amount after TWP completion, because SSDI benefits would be zero and the individual might have no other income. The effect on SSI benefits of applying this disregard to earnings is only $10 because half of the $20 in earnings would not be counted anyway. Hence, under BOND the value of this disregard for a concurrent beneficiary with earnings above SGA might increase by as much as $10 – less if there is income from a source other than SSDI or earnings.

SSI. To the right of "D," each additional hour of work generates *w*/2 in income, as half of additional earnings are counted against the SSI amount.

BOND does not affect the budget constraint for earnings below BYA, but it does affect the budget constraint of the depicted beneficiary for earnings above BYA, shifting it upward in a parallel fashion to the dashed line. The SSI benefit when earnings exceed BYA will be completely displaced by SSDI benefits under the BOND offset schedule. Relative to current law, the financial gain to the individual when earnings exceed BYA will be the height of the cash cliff at SGA, the distance between points C and D.

Exhibit 2-7.   The Budget Constraints of a Concurrent Beneficiary under Current Law and the BOND Benefit Offset
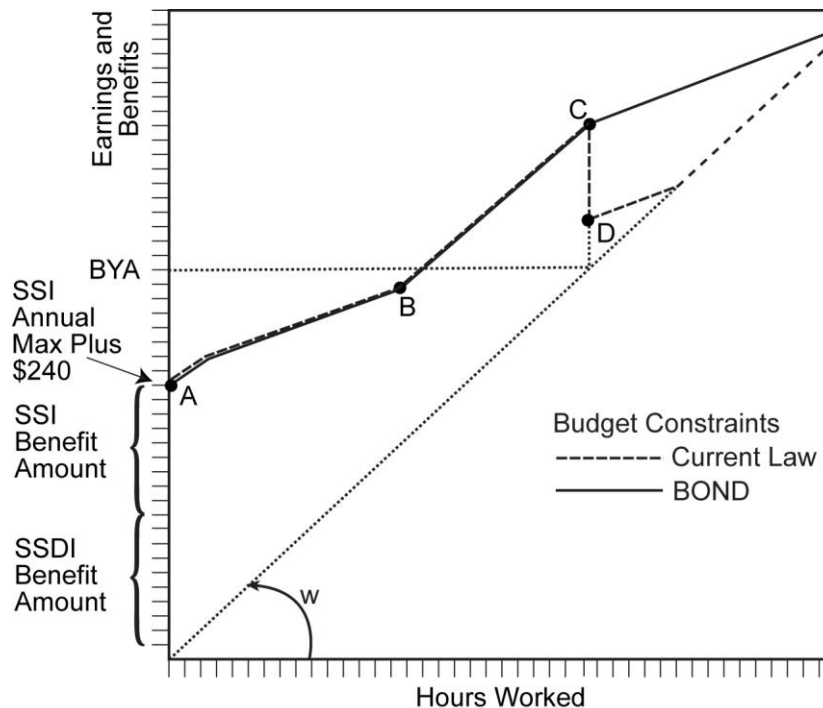
The size of that gain depends critically on the size of the SSDI benefit. If the SSDI benefit were substantially smaller than the benefit depicted, current-law SSI benefits would be positive at the SGA line. Furthermore, just to the right of that line the lost SSDI benefits would be fully replaced by SSI benefits except for $120. The $120 difference arises because the $20 monthly income disregard used to offset SSDI benefits when earnings are below BYA has a monthly value of only $10 when used to offset earnings that exceed SGA. For such concurrent beneficiaries, the gain from the SSDI benefit offset at an earnings level above BYA is at most $120.

Holding the SSDI benefit constant, the size of the gain from the BOND benefit offset also depends on other income. Most other sources of income will *increase* the gain. Because they will increase the size of the cliff (lower point "D"); the other income will reduce the SSI payment amount at any level of earnings. One other specific source will *reduce* the gain: SSI state supplements. In most states that offer supplementary SSI benefits to recipients of federal SSI benefits, the effect of BOND on total benefits

when earnings are above SGA for a concurrent beneficiary is even smaller than in states without such supplements (the case considered so far). These states have an SSI supplement that is fixed as long as the federal SSI payment is positive, but if income that is countable against federal SSI benefits reduces the federal benefit to zero, the state benefit is reduced by the excess countable income until the point where it, too, is zero. The effect on the budget constraint in **Exhibit 2-7** would be as if the federal maximum SSI benefit were increased. Concurrent beneficiaries in parts of 12 states with this type of supplement will be included in BOND: Alabama, Arizona, California, Colorado, the District of Columbia, Maine, Maryland, Michigan, New Hampshire, New York, Vermont, and Virginia.[24]

In a smaller number of states, concurrent beneficiaries earning more than SGA could actually experience a loss in total benefits under BOND, holding earnings constant. In these states, the state supplement is a fixed amount as long as the federal SSI benefit is positive, but then stops in its entirety when the federal benefit is reduced to zero by countable income. Thus, if BOND fully displaces the federal SSI benefit, the state SSI benefit would be lost even if the higher SSDI benefit did not fully replace it. Only one state with this type of supplement will be included in BOND: Wisconsin.

The neoclassical labor supply model predicts that the impacts of BOND for concurrent beneficiaries will be qualitatively similar to those for SSDI-only beneficiaries, but relatively smaller, reflecting the relatively small gain at any earnings level above BYA. The impacts are predicted to be smallest for those whose gain at any earnings level above BYA is just $120 annually, other things equal, and largest for those with relatively high gains, because of low SSDI benefits or substantial other income—not counting SSI state supplements. Other things equal, impacts are expected to be smaller in states with SSI supplements, and perhaps especially in Wisconsin because loss of federal SSI benefits because of BOND would also mean immediate loss of all state SSI benefits.

The previous analysis suggests that many SSI recipients would have at most a small gain in income from BOND and would therefore not be expected to use the offset. However, even concurrent beneficiaries with a small income gain might have a good reason to use the offset: it would allow them to exit SSI entirely without financial loss. Exiting SSI can be attractive because the beneficiary would no longer be subject to the SSI resource (i.e., asset) constraint. The beneficiary could then receive support from other sources, acquire assets and save without restriction. In addition, the beneficiary would no longer be subject to SSI reporting requirements for income and resource information, which can be onerous. Some concurrent beneficiaries might be deterred from exiting SSI, despite these advantages, because exiting SSI might mean loss of Medicaid eligibility, especially in states with no Medicaid Buy-in.[25] Loss of Medicaid eligibility would be especially problematic for those in the Medicare waiting period and those who rely heavily on services that have very limited or no Medicare coverage.

In summary, holding other things constant, concurrent beneficiaries are less likely than SSDI-only beneficiaries to use the offset, and their income gains from using BOND will be lower. The mean impact of the offset on mean SSI payments to concurrent subjects is expected to be negative because they will be

---

[24]   SSI state supplements for states with beneficiaries included in BOND are described in **Appendix B** of the *Design Report*.

[25]   Under section 1619 of title XVI of the Social Security Act, SSI recipients who work can maintain their eligibility even if their earnings are so high that their SSI payment is zero, provided that assets remain below the SSI threshold and income remains below a threshold that varies from state to state and is fairly high.

displaced by SSDI. The displacement of SSI by SSDI implies that the mean SSDI payments to concurrent treatment subjects might increase even if higher earnings reduce mean total benefits. Some concurrent treatment subjects are likely to exit SSI.

2.1.3   The Implications of Other SSDI Program Features

The section considers several features of SSDI that were ignored, for simplicity, in the previous section, but which have implications for predicted impacts. Specifically, this subsection considers: (i) work-incentive counseling, (ii) IRWE, (iii) auxiliary benefits, (iv) Ticket to Work and how it will be modified for BOND treatment subjects, and (v) annual accounting under BOND versus monthly accounting under current law.

Counseling Services

All treatment subjects will have access to counselors that offer WIC services similar to the benefit counseling services offered to current beneficiaries by the WIPA. The only intended difference is that the BOND counselors will be trained to help beneficiaries understand how the BOND offset works. This change alone is not expected to have a material effect on outcomes for treatment subjects relative to control subjects. Nevertheless, it might be critical to successful use of the offset by some beneficiaries and the impacts so generated; i.e., without WIC, some BOND treatment members might not understand, and therefore not use, BOND. Also, because of an increased interest in engagement in SGA, the offset is expected to increase demand for counseling by treatment subjects relative to demand by control subjects. Hence, introduction of the BOND benefit offset is expected to have a positive impact on the use of counseling services generally.

The purpose of Stage 2 intervention is to test the effect of offering Enhanced Work Incentive Counseling services, EWIC, along with the benefit offset. The incremental impact of EWIC on outcomes, given that the offset is in place, will be measured by comparison of T22 mean outcomes to T21 mean outcomes.

The expectation is that, compared to WIC services, EWIC services will help T22 subjects take better advantage of the offset. Specifically, EWIC services will help T22 subjects to access other support services such as those available from TTW. Nevertheless, because of the countervailing impacts of the offset on work behavior described earlier, this line of argument does not imply that mean T22 earnings will be larger than mean T21 earnings; or that the mean T22 SSDI benefits will be lower than T21 SSDI benefits. On the one hand, EWIC counselors might be more likely than WIC counselors to help T22 subjects who would not engage in SGA under current law do so under the offset, thereby increasing earnings and reducing benefits. On the other hand, EWIC counselors might also help more T22 subjects who under current law would engage in SGA and leave the rolls to instead under the offset engage in SGA at a lower level of earnings, and with partial benefits.

The marginal impact of EWIC might vary substantially across sites because of variation in WIC services across sites. The latter is expected to reflect variation in the current services offered by WIPA. At least some of the WIPA draw on resources other than their contracts with SSA. Doing so allows them to provide services that go beyond those for which SSA is paying. In addition, some WIPAs are likely to be the WIC providers.

Although EWIC services have been designed to be an enhancement to WIC services, it is very important for the evaluation to empirically quantify the differences between these services. The magnitude of the difference will affect the interpretation of the impact estimates for the incremental impacts of EWIC from the comparison of outcomes for T22 and T21. For instance, if incremental impacts are small, it will be helpful to know whether they are small because EWIC provides substantial service enhancements that have little value as concerns eventual outcomes, or because those enhancements are insubstantial in the first place relative to the services available to T21 subjects.

The WIC and EWIC counselors might play critical roles in determining the impact of the offset on use of TTW. Counselors for each site will generally be familiar with Employment Networks (ENs) that serve their site, and some of the WIC and EWIC contractors for BOND will be ENs. Their specific knowledge or their organization's financial interests could potentially influence their recommendations in favor of assignment of the Ticket to a local EN rather than assignment to a national provider or no assignment at all. The effect of this knowledge on the incremental impacts of EWIC is difficult to predict. Thus, in general, we cannot put a sign on the expected impacts of EWIC relative to WIC for many of the outomces to be examined in the impact analyses described in Chapter Six.

Impairment Related Work Expenses

When SSA considers whether a beneficiary's earnings represent SGA, it first subtracts the costs of allowable IRWE from earnings. If the resulting "countable earnings" are less than the SGA amount, then the work is not considered to be SGA. Similarly, for BOND treatment subjects any allowed IRWE will be deducted from annual earnings before application of the benefit offset; i.e., the offset will be based only on countable earnings.

The predicted direction of the impact of the benefit offset on IRWE is ambiguous. The incentive to report IRWE will be reduced for those who would keep their countable earnings under BYA by claiming IRWE under current law, because under the benefit offset they will only lose part, rather than all, of their benefits if their countable earnings are above BYA. If they increase their earnings as predicted, however, their actual IRWE might also increase, in which case they might successfully claim more IRWE.

The benefit offset also has countervailing effects for those who would have earnings above BYA and leave the rolls under current law. On the one hand, these beneficiaries might be enticed to claim more IRWE than they would under current law because of the prospect of increased benefits. On the other hand, they might claim fewer IRWE if they choose to work less than they would under current law, because their actual IRWE are lower.

Auxiliary Benefits

The above exposition concerns the effect of earnings on the beneficiary's own benefits under the offset. A small share of SSDI worker beneficiaries also receives auxiliary benefits for dependents. Auxiliary benefits are not available to Disabled Adult Children or Disabled Widow(er) Beneficiaries, because such beneficiaries are not primary beneficiaries. The auxiliary benefits of disabled worker beneficiaries in BOND are not subject to the $1 for $2 offset. Instead, if their countable earnings exceed BYA by so much that their own benefit is zero (i.e., by twice their own benefit), auxiliary benefits will be entirely lost. Hence, beneficiaries with auxiliary beneficiaries will have a cash cliff in their budget constraint at a level

of countable earnings that exceeds BYA by twice the annual value of the worker's own benefit. The height of this cliff is the amount of auxiliary benefits—an average of $461 per month in December 2008.[26] For comparison purposes, the average value of the SSDI worker benefits in the same month was $1,063.

The implications of the auxiliary benefit cliff under BOND are qualitatively similar to those of the current-law cash cliff. Treatment subjects with auxiliary beneficiaries who would not leave the rolls for work under current law might increase their earnings and have their own benefits reduced under the offset, but are not expected to earn enough to lose their auxiliary benefits as well; otherwise they would do so under current law. Treatment subjects with auxiliary beneficiaries who would leave the rolls under current law will have a stronger incentive than otherwise identical subjects without auxiliary beneficiaries to reduce their earnings and obtain partial benefits, including full auxiliary benefits.

Ticket to Work

Both treatment and control beneficiaries will have the option to use their Tickets under TTW. TTW payment rules will be modified for BOND treatment subjects. TTW has important implications for beneficiaries who are considering the benefits of engaging in SGA.

A Ticket is, in essence, a performance-based voucher that can be either used to purchase services or turned into cash payments by achieving earnings and benefit objectives that trigger payments to providers. Conversion to cash benefits requires the assistance of an EN. Under current law, an SSDI beneficiary may assign his or her ticket to a public or private EN under either of two payment systems—outcome-only or milestone-outcome. Under both payment systems, SSA makes outcome payments to the EN for the months in which cash benefits are not payable to the beneficiary because of SGA.

SSA has changed the outcome payment rules for those BOND treatment subjects who use their Tickets. SSA will waive the no cash benefit requirement during the period after TWP and Grace Period completion. Instead, SSA will pay properly documented EN claims for outcome payments during the BOND participation period if the individual is engaged in SGA—in essence, if their benefits are reduced by any amount because of the offset.

Like other beneficiaries, BOND treatment subjects will have the option of converting their Tickets into cash by engaging in SGA after completing the TWP and GP. One national EN specializes in helping beneficiaries make the conversion. The beneficiary assigns the Ticket to the EN, and the EN pays the beneficiary 75 percent of all payments received from SSA because of the earnings and benefit objectives achieved by the beneficiary. These payments can be substantial. Under the current rules and 2010 payment levels for SSDI, SSA will make up to 36 outcome payments to ENs of $711 per month ($8,532 for 12 months) on behalf of the beneficiary under the outcome-only payment system. Hence, an SSDI beneficiary can potentially convert his or her Ticket into a cash payment that is equal to 75 percent of this amount—currently $533 per month, or $6,396 for a full year—by engaging in SGA after completing the TWP and Grace Period.

---

[26] See the *Design Report* for further detail.

The incentive effect of TTW can be most easily understood by considering conversion of the Ticket into cash payments under the outcome-only payment system. The effect of this option for Ticket use reduces the size of the cash cliff under current law for a 36-month period by the amount of the cash payments. Of course the goods and services that an EN provides a beneficiary in exchange for the Ticket can have the same implicit effect. The fact that a participant uses a Ticket to obtain such goods and services rather than converting his or her Ticket into cash suggests that the goods and services have greater value to the beneficiary than the cash payments.

The special outcome payment rule for Ticket coupled with the nature of the BOND benefit offset implies that many treatment subjects could potentially increase their total payments from SSA, for up to 36 months, by engaging in SGA after TWP and grace period completion. The 36 months represent 60 percent of the 60-month BOND participation period. Any treatment beneficiaries who engage in SGA and fail to assign their Tickets will have missed a no-cost opportunity for an additional cash payment in up to 36 months.

The benefit offset is expected to increase beneficiary demand for the services that ENs provide, including conversion of the Ticket to cash benefits. In the absence of the TTW payment rule change for treatment subjects, the supply of providers willing to accept their Tickets might have fallen, but the payment rule change will likely have the opposite effect. That is, ENs will find it more attractive to accept Tickets from BOND treatment subjects than under current law because of the expectation that treatment subjects are more likely to engage in SGA after TWP and Grace Period completion. It remains to be seen whether the same rule for TTW would be adopted under a national benefit offset. A different rule might affect the size of the impact of a national benefit offset on SSA costs, as well as other outcomes, depending on the rule's nature.

The expected increase in both supply and demand implies a positive impact of BOND on Ticket assignments and SSA payments to providers. It will be interesting to see what share of the impact is accounted for by conversions of Tickets to cash benefits. The size and the nature of the Ticket impact might depend on the behavior of benefits counselors, as discussed previously.

Annual vs. Monthly Accounting

The fact that monthly SSDI benefits under BOND will be based on annual earnings, whereas current-law benefits are based on monthly earnings, has important implications for potential users of the benefit offset if their earnings vary substantially from month to month. Relative to monthly accounting, annual accounting can provide a significant advantage to those whose earnings are substantially below the SGA amount in some months but modestly above the SGA amount in others. There are also situations—probably less common—in which annual accounting will be a disadvantage (e.g., when earnings are just below the SGA amount in many months, and much higher than the SGA amount in other months). Specific illustrations appear in the *Design Report.*

Because of the annual accounting period, the impact of the offset on earnings and other outcomes might depend on the variability of earnings in the jobs that treatment subjects can obtain. Seasonal jobs are especially relevant. As only annual earnings will be observed for the Stage 1 sample, it will not be possible to measure what an offset user's benefits would be under current law, holding earnings constant, for the entire SSDI caseload. A continuous work history will be collected for the beneficiaries who

volunteer for BOND at Stage 2 via two follow-up surveys, however, making it possible to determine what each treatment subject's annual benefits would have been under current law given their actual earnings under the benefit offset.

2.1.4   The Implications of Taxes and Non-SSA Benefits

Income and Payroll Taxes

The theoretical discussion above does not consider the effect of taxes on work incentives. Presumably, however, what matters to beneficiaries is disposable (after-tax) household income. Changes in earnings and SSDI benefits under BOND are expected to affect beneficiary taxes in almost all cases. The BOND WIC counselors are expected to help treatment group subjects and prospective volunteers determine whether it is in their interest to use the benefit offset.

The fact that benefits and earnings are treated differently for tax purpose implies that, under the $1 for $2 offset, additional earnings are translated into additional income at a rate that is less than $1 for $2. The difference arises partly because gross earnings are subject to the employee's 7.65 percent payroll tax up to a high limit, whereas benefits are not. In addition, SSDI benefits are partially or fully exempt from income taxes, whereas earnings are not. As a result, a $2 increase in earnings under the benefit offset will generally be accompanied by both a $1 reduction in benefits and an increase in taxes. For instance, if the marginal income tax rate for the beneficiary is 10 percent (the rate for a single individual with taxable annual earnings of $10,000) and benefits are fully exempt, the $2 increase in earnings will increase income plus payroll taxes by $0.36; i.e., the size of the offset counting the higher taxes is $1.36 for $2.

There will be some variation across beneficiaries in the after-tax offset rate, because of variation in other household earnings (e.g., for a spouse), marginal income tax rates, state income tax rates, the share of SSDI benefits that are taxed, and eligibility for the Earned Income Tax Credit (EITC). Relatively high income beneficiaries (e.g., because of spousal earnings) will have relatively high marginal tax rates, so the share of their additional earnings lost to taxes will be relatively large, but because such high income individuals are taxed on a share of their benefits (up to 80 percent) the decline in benefits will reduce the tax on their benefits. Some low-income households with children might experience a decline in total tax payments rather than an increase if their earnings increase under BOND because of the EITC. As discussed in the Section 2.2, the EITC provides a substantial earnings subsidy to such households.[27]

It is likely that the impact of the benefit offset on mean taxes will be in the same direction as the impact on mean earnings, because taxes generally increase with earnings. It is possible, however, that the mean impact of the benefit offset on taxes will be in the opposite direction for beneficiaries with dependent children. For this reason, as well as the fact that the predicted direction of the impact on mean earnings is ambiguous, the direction of the predicted impact on taxes is also ambiguous.

Other Benefits

As described in more detail in the *Design Report*, some SSDI beneficiaries receive cash or in-kind benefits from sources other than SSDI or SSI that are, or might be, conditioned on income. Important

---

[27]   Much smaller subsidies are available for households without children—so small that they are unlikely to substantially affect the tax liabilities of beneficiaries earning more than BYA.

examples include the Supplemental Nutrition Assistance Program, Medicaid, workers compensation, veterans' benefits, and private disability insurance (PDI) benefits. Discussion of the nature of these benefits and estimates of the percentage of SSDI beneficiaries with each of these benefits appear in the *Design Report.*

These benefits might play an important role in the employment decisions of beneficiaries who receive them. As a result, receipt of such benefits is expected to affect the number and characteristics of offset users in Stage 1, the number and characteristics of Stage 2 volunteers, and the size of impacts for both stages. For those who do not engage in SGA under current law, the change in incentives under the offset might not be sufficient to overcome the earnings disincentives from full or partial loss of other benefits. Hence, other things equal, earnings impacts for subjects who receive other benefits that are conditioned on earnings are predicted to be smaller than for those that do not. Mean impacts on receipt of other benefits themselves are predicted to be negative.

PDI benefits might especially deter use of the offset, because of their high value and eligibility rules. Livermore et al. (2009) estimated that 6.6 percent of SSDI-only beneficiaries and just 0.7 percent of concurrent beneficiaries had PDI benefits in 2006. PDI benefits typically "wrap around" SSDI benefits; the PDI benefit is usually defined as a percentage of pre-disability earnings (e.g., 70 percent), but is reduced one-for-one by SSDI benefits. That suggests that a dollar reduction in SSDI benefits under the offset will be replaced by an equal increase in PDI benefits. Our expectation, however, is that insurers will not agree, or be obligated, to pay a higher benefit. Their policies were written to conform to current law SSDI benefits, so it seems unlikely that they would be obligated to more when SSDI rules change. Further, earnings above a threshold (not necessarily the SGA level) are likely to trigger loss of the PDI benefit; i.e., PDI policies have their own benefit cliffs. As the PDI benefit is often quite substantial, the expectation is that beneficiaries with PDI benefits will not use the benefit offset.

2.1.5   Differences between the Demonstration and a National Program

Although BOND was designed to mimic national implementation of a $1 for $2 benefit offset for earnings above BYA to the extent feasible in a demonstration, there are several potentially important differences. This section considers four specific aspects of the demonstration that differ from what can be expected for a national program and the potential effects of those differences on impacts: the opportunity for non-beneficiaries to enter SSDI and use the benefit offset, outreach and recruitment, the duration of the demonstration, and the processing of earnings reports and benefit adjustments. These differences could potentially result in impacts for a national program that differ from those observed for the demonstration.

The Opportunity for Non-beneficiaries to Enter SSDI and Use the Benefit Offset

The demonstration will offer the opportunity to use the benefit offset only to beneficiaries who are *already* on the rolls. Under a national program, the benefit offset might induce some workers who are not on the rolls enter SSDI. Specifically, the neoclassical model of Section 2.1 implies that the more generous treatment of earnings under the offset will induce entry into SSDI of those who would other earn above BYA.

Of course SSA's determination process is designed to screen out individuals who are able to earn more than the SGA amount; the statutory definition of disability is inability to engage in SGA because of a

medically determinable impairment for a period of at least 12 months. Determinations are problematic, however. One reason is that the severity of some conditions is very difficult to assess (e.g., mental illness and lower-back disorders). Another reason is that some very significant impairments (e.g., profound deafness or paralysis of both legs) qualify the applicant for benefits provided that the applicant is not engaged in SGA, even if the applicant has the potential to engage in SGA. The five-month waiting period, during which the applicant cannot engage in SGA, might deter many such individuals from applying, but the introduction of the benefit offset might induce some on the margin to stop engaging in SGA in order to apply. The waiting-period deterrent disappears if the worker is laid off for an extended period (e.g., during an economic downturn). There is substantial evidence that such layoffs increase SSDI entry.[28] The opportunity to eventually return to work and retain a partial SSDI benefit, offered by the benefit offset, might increase the number who enter SSDI after being laid off for any reason. Plus, those who would enter following a layoff even under current law will be less likely to exit under the benefit offset.

The predicted impact of BOND on the benefits of induced entrants is clearly positive, and the predicted impact on earnings is negative—analogous to the impact on beneficiaries who would earn above BYA under current law. There is substantial evidence that increases in program generosity induce entry and reduce the earnings of entrants.[29] Partly based on this evidence, Benítez-Silva et al. have produced non-experimental estimates of the impact of an SSDI benefit offset on induced entry. There is, however, no direct evidence about the effect of changes in the SSDI rules for the treatment of earnings (i.e., the SGA, TWP, and EPE rules) on SSDI entry.

The Ticket Act specified that SSA should evaluate the effects of a benefit offset on induced entry. After considerable consultation with experts, SSA determined that it would not be feasible for BOND to measure induced entry using an experimental research design.[30] Nonetheless, induced entry remains an important issue. SSA plans to assess the likely extent of induced entry through separate non-experimental research.

Although BOND will not be able to produce impact estimates that account for induced entry, BOND estimates will nonetheless provide critical information to policymakers as they further consider implementation of a national program. It is important to keep in mind that BOND will produce estimates of "reduced exit"—the extent to which beneficiaries who would have left the rolls for work under current law remain on the rolls under the benefit offset. Given the deterrent effect of the SSDI waiting period and the often long determination process, reduced exit might be the main mechanism via which BOND will increase the number of beneficiaries. In addition, if BOND produces substantial program savings to the federal government in terms of lower benefits and/or higher tax revenues, policymakers will know how large the effects of the benefit offset on the benefits and taxes of induced entrants would need to be to more than offset the effects for those who would enter SSDI under current law.

Outreach

---

[28]   See, for instance, Autor and Duggan (2003).

[29]   See Maestas et al. (2010) for the most recent evidence and a review of the extensive literature on this topic.

[30]   See Tuma (2001).

The demonstration's outreach efforts are likely to affect the size of impacts. Outreach for a national program will likely differ from outreach for the demonstration. Outreach also differs for the two stages of the demonstration.

Stage 1 outreach includes letters sent to all Stage 1 treatment subjects informing them that they have been selected to receive the more favorable benefit design, plus follow-up contacts with those who are known to have earnings but fail to contact demonstration staff.

In a national program, SSA's outreach process would likely be similar to the Stage 1 process for those already on the rolls when the rules are changed, but those who enter SSDI after the rules change would likely be informed as they enter the rolls, if not before. A perhaps more important difference under a national program is that advocates, providers and others who might educate and influence the beneficiary will know the rules and how the beneficiary can best take advantage of them. Before the start of the demonstration the BOND Implementation Team will reach out to such individuals in the demonstration sites and attempt to build their knowledge and trust. It is, however, very unlikely that this will lead to a level of knowledge and trust in the new benefit design that is commensurate with what would be found under a national program.

In contrast to Stage 1 outreach, Stage 2 outreach is part of a more significant recruitment process. Demonstration staff will actively contact all beneficiaries selected for the solicitation pool, provide extensive information about the demonstration and how the benefit offset might help, and ask the beneficiaries to volunteer. If the beneficiary volunteers, the chance the beneficiary will be offered the offset is less than 100 percent. Another potentially important feature of the process is that the beneficiary must volunteer within a short window of opportunity to have a chance to use the offset– a matter of months after being offered the opportunity.

The evaluation will recognize the differences in the three recruitment processes (Stage 1, Stage 2 and national program), but will have limited ability to assess the consequences of these differences. These consequences include:

- It will be problematic to make useful comparisons between outcomes for T1 and T21 subjects. Even after adjusting for the Stage 2 volunteer rate, it seems likely that the proportion of T21 and T22 subjects that use the offset, and the outcomes of that use, will differ because of differences in the recruitment process.

- The time-limited nature of the invitation to volunteer for Stage 2 might affect who volunteers. For instance, some who are temporarily unable to achieve earnings might volunteer because of a false expectation that they will be able to earn more than BYA before the opportunity to use the offset ends, while others might not volunteer because of a false expectation that they will unable to earn more than BYA during the same period.

- Stage 2 impacts might be affected by knowledge gained by volunteers during the recruitment process, including the knowledge gained by those assigned to the control group.

- Under a national program, beneficiaries and their supporters might have greater understanding and trust in how the offset works than T1 subjects will during the demonstration, and might therefore be more likely to use it.

The evaluation will seek to gain insights about how outreach and recruitment affect demonstration outcomes, in part through analyses that cut across the evaluation components (see Chapter Eight), especially through the process and participation analyses.

Duration of the Offset

Use of the benefit offset under BOND is time-limited and the length of the time limit might affect the size of impacts. Under a national program, the benefit offset might or might not be time-limited. Even if it is time-limited, the length of the time limit might be different than under BOND.

As described in Chapter One and further detailed in the *Design Report*, all treatment group subjects will have the opportunity to use the offset during a 60-month participation period, provided that they complete their TWP by September 2017. This implies that some BOND subjects will be able to use the offset after the planned observation period for the evaluation, scheduled to end in 2017; some could be using the offset as late as August 2022 even if there is no change in current law. Based on the Negative Income Tax (NIT) experiments reviewed below, the expectation is that the impacts of a benefit offset on earnings and benefits would be smaller in the early months of the participation period if the participation period were shorter, but larger if it were longer. The rationale is that beneficiaries recognize the potentially positive effect of current work experience on future earnings, so an increase in the payoff to future earnings increases the incentive to work today. The information generated by the demonstration is not expected to shed light on this issue, because there is essentially no variation in the duration of the participation period across subjects.

Another reason that beneficiary earnings during the demonstration might be lower that what they would be under a longer time limit, or no time limit, is that demonstration beneficiaries will be concerned about the implications of engaging in SGA during the BOND participation period for continuation of SSDI benefit eligibility after the participation period ends. SSA has stated that it will not terminate their benefits after the participation period on the basis of SGA during the BOND participation period. Nevertheless, beneficiaries might not trust SSA to ignore work experience during the participation period. Such beneficiaries might stop engaging in SGA well before the end of the participation period, to demonstrate their inability to engage in SGA; or even never participate at all. The shorter the duration of the demonstration period, the sooner they will stop engaging in SGA. Evidence of such behavior might emerge from the later stages of the process evaluation (see Chapter Four), but will not be quantifiable.

Processing of Earnings Reports and Benefit Adjustments

BOND administrative procedures for reporting earnings and making benefit adjustments for treatment subjects will differ in important respects from current administrative procedures, beyond the difference in the benefit design and switch to annual accounting. These changes themselves might affect the size of impacts. Most importantly, treatment subjects will use a centralized process for earnings reports and benefit adjustments. Under current law, SSA field offices have primary responsibility for these processes. The BOND centralized process will be used to determine TWP completion and use of Grace Period months. In addition, the centralized process will be used to: (i) submit annual earnings and offsetting expense estimates; (ii) adjust benefits according to the offset schedule; (iii) submit and process mid-year revisions (if any); and (iv) reconcile benefits to actual earnings after the end of the year.

A national program would likely adopt some BOND administrative procedures, such as the centralized automated system designed to determine the size of benefit adjustments, but presumably others would differ. It seems likely that field offices will play a prominent role in the processing of earnings reports and benefit adjustments. Such differences between BOND and a national program could affect the size of a national program's impacts.

The effects of differences between national program processes and BOND processes on processing times might be especially important for differences in demonstration and national outcomes. The BOND processes were developed in part because backlogs under SSA's current process can result in long delays in the processing of earnings reports and benefit changes. As detailed by Livermore (2003), the result is that beneficiaries who return to work may not know when they have completed their TWP, and even if they do, they may continue to receive payments that should have been suspended. Once earnings reports are processed, beneficiaries are often notified that they have been overpaid and must re-pay received benefits. Resolution of overpayments can require substantial effort on the part of the beneficiary, and can also leave the beneficiary uncertain about her/his income for a long period of time. When the beneficiary has reported earnings on a timely basis, and is not at fault for the overpayment, SSA may forgive some or all of the overpayment. In some instances, overpayments are discovered only after the re-entitlement period has ended and benefit eligibility is terminated.

The effects of processing delays in earnings and benefits under current law are not known. Effects on engagement in SGA might be in either direction. There are at least two reasons why lengthy processing times might increase engagement in SGA under current law. First, overpayments are interest free loans, part or all of which might be forgiven. This increases the incentive to engage in SGA for beneficiaries who understand the rules and the process. Second, some beneficiaries may exit the rolls unintentionally when they engage in SGA, under the assumption that they are still entitled to their benefits. If they had learned immediately of the consequence for their benefits, they might have quickly stopped engaging in SGA. It is also possible, however, that beneficiaries view the hassle of dealing with overpayments and the uncertainty associated with the amount of their benefits as a cost of engaging in SGA, which might deter them.

Processing times under BOND might be substantially shorter than under current law; that will depend on the adequacy of resources to support the current process during the demonstration period. Shorter processing times could contribute substantially to observed impacts. However, any effect of shorter processing time will be confounded with the effect of the change in benefit design.

To at least partially address this issue, SSA has assigned responsibility for the processing of all TWP and GP determinations for all Stage 2 subjects—treatment and control—to the central processing unit. Hence, any impacts for T21 and T22 subjects relative to C2 subjects will not be confounded by the effects of differences in TWP and GP processing times.[31] Impacts of any differences in processing times for benefit adjustments after TWP and GP completion will be included in the Stage 2 impact estimates, however.

---

[31]   The trade-off is that C2 will not constitute a current services control group.

2.2   Past Research on Employment Incentives in Transfer Programs

This section examines the findings from earlier tests of employment incentives in transfer programs for lessons about the likely direction of impacts of the benefit offset on two key outcomes: mean earnings and mean benefits.

BOND is the latest in a long history of research on how to address work disincentives associated with cash transfer programs targeted at those facing employment challenges (e.g., SSI, Temporary Assistance to Needy Families (TANF) and its predecessor, Aid to Families with Dependent Children (AFDC)). Prior research has focused primarily on a different population, parents with minor children, and on transfers provided in the form of a cash payment or tax credit. SSDI is similar in that it provides transfer payments, but the payments are benefits from a social insurance program, funded by worker contributions, rather than welfare payments funded by other taxpayers. Further, the target population—disabled workers—is much different than the target population of AFDC/TANF. Conceptually, however, the problem addressed by earlier research is quite similar to the problem to be addressed by BOND: a benefit structure with rapid withdrawal of cash assistance as the recipient's earnings increase creates a strong disincentive to work. In response to this problem, other programs have considered—and estimated the impact of— changes to their benefit structure that more gradually reduce benefits as earnings increase; i.e., BOND-like innovations.

The design of BOND and its evaluation has drawn on lessons from past research on this approach to addressing the work disincentives in transfer programs, and the findings from that research have shaped expectations for the findings from the BOND evaluation. Nevertheless, there are important differences between BOND and the earlier evaluations, concerning the target population, existing program rules, and the nature of the benefit payment innovations. These differences limit what can be learned from the previous literature about the likely impacts of BOND, and are important reasons for conducting the BOND intervention test rather than relying on existing research. Nonetheless, past research provides many lessons for BOND's evaluation. The findings from the BOND evaluation, in turn, will be of interest to a broad audience of individuals interested in employment disincentives associated with a range of transfer programs.

There are four related literatures on work disincentives in income support programs. The most closely related concerns demonstrations of alternative work assistance and incentives for SSDI and SSI beneficiaries. We review that literature first. The other three literatures are then reviewed in chronological order: the Negative Income Tax (NIT) experiments, AFDC reforms, and expansions in the Earned Income Tax Credit (EITC).

Social Security Disability Demonstrations

SSA began the process of testing changes to the SSDI benefit design in the early 1980s. Initial interest was stimulated by the NIT experiments, discussed below. In fact, as an outgrowth of the NIT, the 1980 amendments to the Social Security Act introduced, on a trial basis, the gradual reduction in SSI benefits that occurs as beneficiary earnings increases, described earlier (Bound and Burkhauser 1999). In the same amendments, Congress authorized SSA to conduct SSDI demonstrations focused on helping beneficiaries return to work and reduce their reliance on benefits (GAO 2004). The amendments identified policy alternatives for SSA to consider, including allowing for a gradual reduction in benefits based on earnings. Interest in addressing the work disincentives associated with the SSDI cash cliff was reinforced by the

1990 passage of the Americans with Disabilities Act. Then, a National Academy of Social Insurance panel considered an SSDI benefit offset (Hoynes and Moffitt 1996) for all individuals meeting medical eligibility criteria for SSDI and SSI (Burkhauser and Daly 1996). Congress subsequently asked SSA to implement and evaluate an SSDI $1 for $2 benefit offset demonstration in the 1999 Ticket to Work and Work Incentives Improvement Act (Ticket Act).

Since 1980, SSA has primarily used its demonstration authority to test various approaches to financing return-to-work services or helping SSDI and/or SSI beneficiaries navigate the service system (GAO 2004). Demonstrations include the Research Demonstration Program, the Transitional Employment Training Demonstration, Project NetWork, and the Project Referral System for Vocational Rehabilitation Providers. The interventions tested have had little demonstrable impact on earnings or benefits. Tests of two other service interventions are currently being completed: the Mental Health Treatment Study and Accelerated Benefits. SSA has also conducted a non-experimental evaluation of the Ticket-to-Work program, but thus far the evaluation has not found evidence of impacts on either earnings or benefits (Stapleton et al. 2008). The State Partnership Initiative (SPI) was the first SSA demonstration to test changes in work incentives, but only for SSI recipients. The interventions tested varied by state, and included various combinations of benefits counseling and employment services (Peikes and Sarin 2005). Four states (California, New York, Vermont and Wisconsin) offered waivers to SSI recipients that allowed them to keep more of their earnings than under current law. Most notably, the rate at which SSI benefits declined with earnings above any disregards, as reduced from $1 for every $2 in earnings to $1 for every $4. Three of the four states found positive impacts on mean earnings, but the fourth state, which conducted the most rigorous evaluation, found no increase.[32] No significant impacts on benefits were found. SSA is currently testing a similar change to SSI work incentives for SSI youth as they transition to adulthood, in the Youth Transition Demonstration.

The Benefit Offset Pilot Demonstration (BOPD), conducted between 2005 and 2008, was the first experimental test of a change in SSDI work incentives. The BOPD was a pilot test of the feasibility of implementing the SSDI benefit offset to be tested in BOND, The demonstration was conducted in four states—Connecticut, Utah, Vermont, and Wisconsin. Each of the BOPD states recruited between 250 and 600 SSDI-only beneficiaries from groups that were identified as working or seeking employment, specifically including beneficiaries enrolled for services at the state's vocational rehabilitation agency (SVRA) or enrolled in the state's Medicaid Buy-in (MBI) program. Of these, half were randomly assigned to a benefit offset treatment and the remainder to a current law control group. Each state has produced a report on its findings, and SSA has conducted additional analysis of impacts on earnings and benefits.[33] The specific groups targeted, as well as outreach and recruitment methods, varied considerably across the four states.

---

[32]   The first three evaluations used non-experimental methods to identify the impacts of the tested benefit designs. Hence, the impact estimates might confound the effects of unobserved differences between treatment and comparison subjects with the effects of the treatment offer. The fourth evaluation used an experimental design to ensure that any unobserved differences between the treatment and control groups would be random and small.

[33]   See Bureau of Rehabilitation Services (2009) for Connecticut, Chambless et al. (2009) for Utah, Porter et al. (2009) for Vermont, and Delin et al. (2009) for Wisconsin. Weathers, Hemmeter, and Wiseman (2010) summarize the findings and discuss why the findings vary across states.

The impact findings from the BOPD are of interest, although the BOPD was designed primarily as an implementation test. Since the BOPD was designed primarily as an implementation test, sample sizes were small and the beneficiaries offered the offset were not representative of the beneficiary population in the BOPD states, let alone the national population.

Weathers, Hemmeter and Wiseman (2010) report impact estimates for the first two years after random assignment. Over all four states combined, they find:

- A significant increase in the percentage of treatment group subjects earning above annualized SGA (i.e., BYA),

- Virtually no difference in mean earnings one year after random assignment and a modest difference in the second year (just under $1,000 per year) that was not statistically significant,[34] and

- A significant increase in mean benefits, of approximately $500 in each of the first two years after random assignment.

It appears that positive earnings effects for those whose earnings would have been below BYA under current law were negated by reductions in earnings for those who would have earned above BYA under current law. Also, it appears that benefit reductions for those who would have earned less than BYA under current law were outweighed by benefit increases for those who would have earned above BYA and receive no benefits under current law. Both of these scenarios are consistent with theoretical predictions about a $1 for $2 SSDI benefit offset presented above.

As described in more detail in the *Design Report*, the BOPD process evaluations found significant shortcomings with the processes used to report earnings, complete TWP determinations, make benefit adjustments, and reconcile benefits at the end of the year. These shortcomings cast some doubt on the correctness of the BOPD impact estimates. In part, the BOND processes outlined previously were designed to address these limitations. Hence, the performance of these processes is an important evaluation topic.

Based on qualitative evidence, the BOPD evaluations concluded that more counseling would have helped BOPD subjects take better advantage of the offset. In response, SSA included a formal test of the incremental impact of EWIC, added to the benefit offset, in the design of BOND.

The Negative Income Tax Experiments

The earliest experimental research on how government transfer payments affect work behavior centered on the Negative Income Tax (NIT) experiments that began in the 1960s.[35] An NIT provides an income guarantee to every household, but reduces the amount paid to the household as the household's resources, including earnings, increased. Unlike the SSDI benefit offset, however, the NIT was designed to test an entirely different income support system and not just an alternative method of counting earned income in

---

[34]   The point estimates reported are $122 in the first year and $946 in the second year, with standard errors of $502 and $805, respectively.

[35]   See Burtless (1986) and Moffitt (2004) for details.

an existing transfer program that contained a strong work disincentive. Overall findings from the NIT experiments pertain both to the provision of an income guarantee as well as how earnings count against it, and so have few lessons for BOND. In general, the experiments found negative mean impacts on work effort and earnings, stemming largely from the fact that the NIT was offered to many low-income households that would not otherwise be eligible for a cash transfer payment. Effects for those households eligible for AFDC were more favorable, but differences between the NIT benefit design and the design of AFDC benefits at the time were modest in many states. Under an AFDC provision introduced in 1967, AFDC benefits were reduced by $2 for every $3 of earnings above an initial $30 monthly disregard—in essence an NIT applied to families with children only.

The NIT experiments do, however, offer one important lesson for BOND, concerning the likely impacts of BOND's duration. Most of the NIT experiments ran for three years. Robins and West (1980) report on a test of a five-year NIT versus a three-year NIT. After two years, they found larger employment effects under the five-year NIT than under the three-year NIT. The implication is that the longer demonstration period increased the size of the impacts in the first three years. This suggests that the impact of BOND would be smaller than if the offset were available to treatment subjects for a longer period, or without a time limit.

Welfare Experiments

Although a national NIT was never enacted, interest in improving work incentives for AFDC families continued. The NIT experiments were followed by a series of experiments that changed incentives through changes to AFDC benefit rules (including similar Canadian rules in one study), often in combination with other programmatic changes. Unlike the NIT experiments, these experiments exclusively targeted families that were already receiving AFDC—analogous to the fact that BOND will target existing SSDI beneficiaries. The evaluations of the three experiments that focused primarily on financial work incentives—California's Work Pays Demonstration Program (CWPDP), Vermont's Welfare Restructuring Program (WRP), and Minnesota's Family Investment Program (MFIP)— consistently found positive effects on employment; insignificant impacts on mean earnings; increases in program participation; and mixed results for mean welfare payments (Moffit 2002 and 2004, Grogger and Karoly 2005). Several experiments tested financial incentives in combination with mandatory work-related activities, but no such requirements will be tested under BOND.

The Earned Income Tax Credit [36]

The EITC was first enacted in 1975, as an outgrowth of interest in the NIT. The EITC combines an earnings subsidy for those with very low income (i.e., the size of the tax credit initially increases with earnings), a fixed subsidy over an intermediate income range, and, analogous to the NIT, a gradual phase out of the subsidy at higher income levels. For those with zero earnings, the EITC provides an unambiguously positive incentive to work. For those whose earnings in the absence of the EITC would be in the range where the credit increases with earnings, the EITC might or might not increase the incentive to work, and for those in the phase-out range the EITC creates a work disincentive. [37]

---

[36] This section draws heavily on Eissa and Hoynes (2006) and Hotz and Scholz (2003).

[37] For those whose earnings would otherwise be in the range over which the EITC is increasing, the effective of the EITC on the incentive to work will be the positive if the positive substitution effect is greater than the

Although the EITC's design is quite different than that of the SSDI benefit offset for those with low levels of earnings (the EITC initially increases with earnings, whereas SSDI benefits remain constant), findings of the non-experimental evaluations of the EITC are nonetheless of relevance. The EITC greatly increased the incentive to work, and the evaluations have consistently found strong positive effects on the employment of single mothers. The SSDI benefit offset will greatly increase the incentive to engage in SGA, so perhaps it will similarly induce a large increase in SGA. The EITC evaluations also found that the EITC had little effect on the hours of work of those already working. This suggests that the earnings of those induced by the offset to engage in SGA will not increase by a large amount, and that changes in earnings induced by the offset for those who would engage in SGA under current law will not be large.

Summary

The literature suggests that the effect of replacing the SSDI cash cliff with a gradual reduction in transfer payments as earnings rise will depend on how the new rules are structured, as well as the design of the existing system. With the exception of the BOPD evaluation, the literature addresses a change from a system that is different than the current design of SSDI to a new system that is different than the benefit offset to be tested under BOND. While many of the subsequent welfare reform demonstrations had work requirements, as did the PRWORA, BOND has none. The EITC is quite different than the benefit offset because transfer payments *increase* with earnings at low levels of earnings.

Nonetheless, the findings from this literature are suggestive of what can be expected from BOND. Perhaps most importantly, the literature demonstrates that if an existing transfer program is modified to have a more gradual reduction in benefits as earnings increase, there are likely to be countervailing impacts for those who would be high and low earners under current law. The findings in the welfare literature show positive mean impacts on employment and earnings in some cases, but not all. Countervailing impacts also apply to benefits, and in many cases mean benefit payments increased.

A second important finding is increases in program participation, because fewer participants exited the rolls. These findings reinforce the theoretical prediction that fewer beneficiaries will exit the rolls under BOND. The NIT and AFDC demonstrations do not offer clear insights on induced entry under BOND, in part because the design of the latter precluded estimating induced entry, and also because the process of obtaining SSDI benefits is much more onerous than the processes that were in place for gaining entry into the NIT or AFDC.

A third important finding in the literature is that most effects on work effort are effects on employment, not on adjustments in hours worked. Hoynes and Moffitt (1996, p. 199) conclude that "the empirical evidence from the welfare program literature reveals a consistent pattern of inelastic (i.e., weak) responsiveness of work effort to changes in [the rate at which benefits are reduced with earnings]." These changes are often attributed to the fixed costs of working; i.e., work is not worthwhile until it generates enough disposable income to compensate for fixed costs such as transportation to work and child care. A finding of substantial marginal impacts on hours worked of those already working for BOND would be a departure from findings in the literature. But the theory presented in the previous section predicts that

---

(presumably) negative income effect. For those with earnings in the intermediate range, however, there is only an income effect. For those in the phase-out range, both the substitution and income effects discourage work.

some treatment beneficiaries who would work under current law will adjust their hours worked to either a) increase their earnings from just below the SGA level to above it, or b) reduce their earnings from well above SGA to a lower level that puts them on the "ramp" portion of the benefit schedule. Earlier demonstrations did not test the impact of removing such a large benefit cliff. Hence, BOND impacts on work effort might be qualitatively different than what has been observed in other demonstrations.

Finally, the finding that NIT impacts are larger when offered for a longer period even as early as the second year after the offer is made suggests that the impacts of the SSDI benefit offset will be sensitive to its duration in particular direction—the longer the duration, the larger the initial impacts. Treatment subjects will be able to use the offset for essentially five years after TWP completion. Alternative durations will not be tested in BOND, however.

2.3   Summary of Theoretical Predictions and Consistency with Available Evidence

Exhibit 2-8 summarizes the theoretical predictions about the impacts of the benefit offset on numerous outcomes. The exhibit shows the predicted sign for the impact over all subjects as well as the predicted sign for subjects in each of two mutually exclusive groups. The "less than BYA" group is those who would not earn more than BYA under current law, except possibly during the TWP or GP. This is an aggregate of the first three current-law groups considered in Section 2.2 (no earnings, earnings well below BYA, and earnings just below BYA), because the predictions for those in these three groups are qualitatively identical (see **Exhibit 2-6**). The "greater than BYA" group is the same as the fourth group in the earlier exhibits—beneficiaries who would earn above BYA after TWP and GP completion under current law.

Exhibit 2-8.   Summary of Theoretical Predictions for the Impacts of the Benefit Offset

	All Subjects	**Current Law Earnings**	
		Less than BYA	**Greater than BYA**
Percent with annual earnings above BYA	+	+	0
Mean annual earnings	?	+	-
Mean annual SSDI benefits	?	-	+
Percent receiving an SSDI benefit	+	0	+
Percent employed	+	+	0
Percent completing the TWP and Grace Period	+	+	0
Mean annual SSI benefits (concurrent beneficiaries)	-	-	-
Impairment Related Work Expenses	?	?	?
Taxes	?	+	-
After-tax household income	+	+	+
Use of benefits counseling services	+	+	+
Use of employment services	+	+	+
SSA payments for employment services	+	+	+
Quality-of-life indicators	?	?	?

The predicted signs of two important outcomes, mean earnings and mean SSDI benefits, are ambiguous because the benefit offset is predicted to have countervailing effect for the two groups. The literature is clearly consistent regarding the existence of such countervailing impacts. The BOPD results are no exception, and they also point to the possibility that mean benefits will increase even if mean earnings increase.

The predicted direction of impacts on taxes are also ambiguous, in part reflecting the ambiguous prediction for earnings, as well as the fact that some who increase their earnings might experience income tax reductions because of the EITC. The predicted signs for many other outcomes are not ambiguous, however. They are either the same for both groups, or the predicted sign for one group is unambiguous and the impact for the other is predicted to be zero.

The evaluation will produce estimates of the overall impacts (see Chapter Six), but it cannot produce estimates for the impacts for each of the two subgroups shown in the table, as the treatment subjects cannot be divided into the two groups; i.e., it is not possible to tell whether treatment group subjects would have engaged in SGA under current law on an individual basis. For some variables (e.g., earnings and benefits) comparisons of the percentiles of outcome distributions for treatment and control subjects can be used to test for countervailing effects on the two groups. For instance, the hypothesized countervailing effects for earnings imply that the evaluation should expect to find an *increase* in the percentage with earnings above BYA, but might at the same time find a *decrease* in the percentage with earnings above some higher threshold (e.g., two or three times BYA). Our plan for the impact analysis in Chapter Six takes account of this possibility.

Several additional hypotheses concern the relative size of impacts for various groups:

- EWIC services are likely to reinforce the impacts of the offset on earnings and benefits, but the predicted sign of their marginal impacts is ambiguous because of countervailing effects that make the predicted signs of the offset's impacts on these outcomes ambiguous. That is, greater understanding of how various levels of earnings will affect income might result in some beneficiaries working more and others working less, and we do not know how these will balance. Predicted incremental impacts on employment (yes/no), TWP completion, Grace Period use, and engagement in SGA are all positive. All of these predictions will be considered in the comparison of outcomes for the two Stage 2 treatment groups: T21 and T22 (see Chapter Six).

- Eligibility for other income-contingent benefits (including SSI and PDI) reduces the value of the benefit offset, so it seems likely that use of the offset by recipients of such benefits will be lower than for others. Recipients of PDI benefits are especially unlikely to use the offset. Those who receive SSDI benefits for auxiliary beneficiaries and would not engage in SGA under current law are not expected to earn past the point where their own benefits are zero. Although the evaluation will not formally test all of these predictions, they are likely to be reflected in descriptive statistics from the participation analysis (e.g., on receipt of other benefits) and subgroup impact estimates (e.g., SSDI-only versus concurrent beneficiaries for Stage 1).

- The impacts of the benefit offset and the incremental impacts of EWIC services on many outcomes will vary with a wide variety of individual, labor market and site characteristics, holding other factors constant, but only sometimes in predictable ways. Important examples include, but are not limited to:

– The existence of fixed employment costs and opportunities to obtain higher wages by working longer hours make it more likely that beneficiaries who would not work under current law will do so under the offset; and

– The marginal impact of EWIC services in a site will depend on the extent to which WIC counselors in the site provide services above and beyond those funded by the demonstration, perhaps using support from other sources.

Several additional theoretical points have important implications for the interpretation of the impact findings:

1. In a national program, the BOND benefit offset might induce SSDI entry, but induced entry will not be reflected in the BOND impact estimates.

2. Two other important features of the demonstration that might differ under a national program are likely to affect the size of impacts: outreach to treatment subjects and the 60-month duration of the offset participation period. Use of the offset is expected to increase with the intensity of outreach and the duration of the offset period, but these predictions cannot be tested with demonstration data. Impacts of a national program might also differ from those observed in the demonstration because of possibly important differences in administrative processes.

3. The switch from monthly accounting under current law to annual accounting under the offset will have effects on work incentives for those with variable monthly earnings relative to effects for those with constant monthly earnings. For some (likely many), annual accounting will increase the size of the annual benefit under the offset relative to what it would be if the offset were administered monthly, holding annual earnings constant. For others (likely few), however, annual accounting might mean that annual benefits under the offset are lower than under current law, again holding annual earnings constant.

4. The impact estimates of the offset for T1 will include any impacts of the demonstration's centralized processes for reporting of earnings and making benefit adjustments, but the predicted direction of the effects of the latter on most outcomes is ambiguous and will depend on the length and uncertainty of processing delays in the SSA centers that will serve C1 control subjects. Differences in administrative processes will have less of an effect on impact estimates for T21 and T22 subjects because C2 subjects will also use the demonstration process for expediting TWP determinations. The process evaluation will compare administrative processes as actually experienced by treatment and control subjects.

5. Outcomes for T1 and T21 subjects will not be comparable even after adjustments for the rate at which beneficiaries volunteer to participate in Stage 2 and the characteristics of volunteers, because of differences in outreach to the two groups, and because Stage 2 volunteers will have multiple opportunities to interact with demonstration staff as they are being recruited. The same reasons imply that outcomes of C1 and C2 subjects will not be comparable. Differences in the processing of TWP determinations for C1 and C2 projects also might contribute to differences in outcomes for these two groups.

2.4   The Logic of BOND

This section reprises the logic model for BOND that was first presented in the *Design Report*. The logic model, which will be used to guide the evaluation, provides a description of the objectives of the demonstration, the desired impacts of the BOND innovations on key outcomes, and how it will be determined whether those effects are realized and how large they are. The section begins with a description of the model and concludes with a description of how each of the four major components of the evaluation is related to the model.

The logic model, presented in **Exhibit 2-9,** summarizes the "results chain"; i.e., the activities/processes, outputs, outcomes, and impacts of the program. Objectives in the first box guide the design of intervention inputs and processes in the second box. The demonstration then operates, producing the outputs in the third box. In order for BOND to have an impact, beneficiaries would need to have different outcomes than they would under current law in the short-term (e.g. use more employment services), intermediate-term (e.g., more frequently complete the TWP and enter the EPE), and long term (e.g., more frequently earn above SGA after TWP completion). Only that portion of each outcome that is caused by the intervention (i.e., the portion which does not take place in the control group) constitutes a BOND impact.

As discussed in the previous section, the direction of the impacts for some key outcomes is predicted by theory; an example is the expected increase in SGA after TWP completion. The direction of other key impacts is not predicted by the theory. Specifically the impacts on mean earnings and benefits are theoretically ambiguous. The evaluation will determine whether these and other impacts for those who would enter SSDI under current law are in the desired direction, and provide information about their size. It will not provide estimates of impacts for those who might be induced to enter by the introduction of the benefit offset.

Exhibit 2-9.   The BOND Logic Model

Objectives

1. Establish a cash benefit system with better work incentives, to improve financial returns of working.

2. Develop work incentive counseling systems to improve beneficiary understanding of work incentives and ability to use them.

Inputs/Processes

1. Implement a cash benefit system with a $1 for $2 benefit offset starting at SGA.

2. Implement two models of benefits counseling: regular Work Incentives Counseling (WIC) and Enhanced Work Incentives Counseling (EWIC).

Outputs

1. Stage 1 assignments and outreach completed.

2. Stage 2 recruitment and assignment completed.

3. Services delivered as planned: counseling, earnings processing, TWP determinations, benefits adjusted.

Short-Term Outcomes

1. Use of counseling services
2. Use of employment services
3. Employment
4. Use of TWP months
5. Earnings and SGA during TWP

Intermediate Outcomes

1. TWP completion/offset period entry
2. Employment, SGA, and benefit reductions after TWP completion

Long-Term Outcomes

1. Earnings, benefits, taxes
2. Hours, fringe benefits
3. Benefits from other programs
4. Household disposable income
5. Health and functioning
6. Quality of life

Short-Term Impacts

1. Increased use of counseling services
2. Increased use of employment services
3. Increased Employment
4. Increased TWP months
5. Increased earnings and SGA during TWP

Intermediate Impacts

1. Increased TWP completion
2. Increased employment, SGA, and benefit reductions after TWP completion

Long-Term Impacts

1. Increased earnings and taxes
2. Reduced benefits
3. Increased hours, fringe benefits
4. Reduced benefits from other programs
5. Increased household disposable income
6. Improved health and functioning
7. Improved quality of life

Notes: The timing of outcomes reflects beneficiary decisions and steps based on expectations of BOND-induced changes in net income in future years. It assumes a beneficiary who is interested in returning to work but not already in the TWP or parked below SGA. Impacts are measured as differences between outcomes for treatment group members compared to members of the appropriate control group. Differences must be statistically significant to demonstrate impacts.

The four major evaluation components described in Chapter One focus on different aspects of the logic model:

- The **process** evaluation will focus on the **inputs/processes** and **outputs**, to determine the fidelity of the demonstration's implementation and the services delivered to treatment subjects to the demonstration's design.

- The **participation** evaluation will examine the **short- and medium-term outcomes** for treatment group subjects to determine the extent to which treatment subjects use offered counseling services, obtain employment services under TTW, work, complete the TWP, engage in SGA, and utilize the offset.

- The **impact** evaluation will measure the **short-, medium-, and long-term impacts** of the BOND interventions by comparing outcomes for those in each of the various BOND treatment groups to the outcomes of those in the appropriate control group. It will also produce extensive information on **long-term outcomes** for all Stage 2 groups, and more limited information on such outcomes for the Stage 1 groups.

- The **benefit-cost** study will rely heavily on the estimates of **short-, medium-, and long-term impacts**, to compare the marginal costs and benefits of implementing a national benefit offset from multiple perspectives including society as a whole, beneficiaries, taxpayers, and SSA.

Extensive data will be required to meet the objectives of the evaluation. Each of the four evaluation components will draw on multiple data sources. The next chapter presents the data collection plan. The subsequent four chapters describe how the data will be used in the four evaluation components, in turn.

Chapter Three.   Evaluation Data

The BOND evaluation will draw on three types of data:

- Administrative records of SSA and other agencies, including the Centers for Medicare & Medicaid Services (CMS) and the Rehabilitation Services Administration (RSA);

- Surveys of treatment and control subjects in Stages 1 and 2; and

- BOND Operations Data System (BODS) data, which includes data from random assignment, outreach, recruitment, intake, earnings data collection, and data exchange between BOND operational components and SSA.

The administrative, survey, and operations data will be functionally distinct and managed separately. The systems share data only for specific purposes that meet SSA's data security requirements. The BOND team will access these data following the security procedures developed for the demonstration specifically to protect against unauthorized access to data and inappropriate use of data by authorized users.[38]

The BOND team will use these data sources to address several key evaluation questions concerning all of the outcomes identified in the logic model presented in Chapter Two. For example, SSA administrative data and BODS program data will include information on beneficiary characteristics, program outcomes, and use of the counseling and other services that will be available throughout the project. These data will be supplemented with data from surveys on key characteristics and outcomes of interest, including beneficiary health, employment, satisfaction with services, and income.

This chapter provides an overview of each of these data sources, including a description of the key analytic variables and the timeline for data collection. The subsequent chapters of this report include descriptions of analytic tables based on the data elements from these data sources and timetables for their production. The administrative data summary in the next section is based on previous experience in using these data for other projects where SSA and other government agencies have collaborated to create administrative extracts for research purposes. The survey data summary in Section 3.2 is based on McInnis et al. (2010), which provides the instruments as well as other details. The BODS summary in Section 3.3 is based on O'Day and Vandergoot (2010).

3.1   Administrative Data

The BOND analyses will include administrative data from SSA program administrative records, SSA earnings records, and administrative records from CMS and the RSA (**Exhibit 3-1**). We discuss each source in turn.

---

[38]   The BOND Operations Data System is a "Moderate" impact system under National Institute of Standards and Technologies (NIST) guidance. BODS will implement applicable controls of a "Moderate" impact system as outlined in *NIST Special Publication 800-53 Revision 2*, *Recommended Security Controls for Federal Information Systems.*

3.1.1   SSA Program Administrative Records from the Ticket Research File (TRF)

The BOND team will use SSA program administrative records from the Ticket Research File (TRF) to examine the characteristics and SSA program outcomes of all BOND subjects. Originally constructed to support the research needs of the Ticket to Work evaluation, the TRF is a longitudinal database that currently includes records for all SSDI and SSI beneficiaries age 10 or older who have received an SSDI or SSI disability benefit in any month since January 1996.[39] This group totals more than 22 million individuals. The TRF combines data from the SSDI and SSI programs over many years into a single record for each individual on beneficiary characteristics, such as age, gender, race/ethnicity, state of residence, and impairment type, and on program outcomes such as program history and benefit payments.[40] Special updates of the TRF will be made available during the BOND demonstration so that the latest program information can be incorporated into the project's evaluation reports (see Chapter Nine). We anticipate that these records will be available with a two month lag. For example, a TRF extract in March 2012 would include full program records on BOND subjects through January 2012.

3.1.2   SSA Master Earnings File

The evaluation will draw on earnings information from SSA's Master Earnings File (MEF). The MEF contains longitudinal information on the total wages and self-employment income reported to the Internal Revenue Service (IRS). The data are derived from IRS Form W-2, quarterly earnings records, and annual income tax forms (Olsen and Hudson 2009). The major advantage of the MEF is that it contains comprehensive historical information on earnings sources of all prospective BOND subjects that can be used to construct annual employment and earnings estimates. The BOND team will work with SSA staff throughout the demonstration to track impacts employment and earnings. SSA staff have direct access to MEF data, but contractors do not, because the data are collected by the IRS and are therefore subject to IRS access rules. Consequently, SSA staff will access the data, submit programs developed by the BOND team to measure impacts, review output in collaboration with SSA researchers to ensure that it complies with privacy requirements, and then summarize the findings for the BOND team. The MEF earnings data are updated annually, with more than 90 percent of the records updated by August of the following calendar year. They are complete by the following February. Hence, the lag in obtaining earnings information is approximately 9 to 14 months.[41]

---

[39]   For more details on the data elements in the TRF, see Page et al. (2009).

[40]   There are two SSDI benefit variables in the TRF, both of which are of interest to the evaluation because of the way that BOND will affect benefit payments. The first benefit variable for each month is the "amount paid," which represents the benefit actually sent to the beneficiary. The second is the "amount due," which represents the amount that SSA is scheduled to pay the beneficiary based on the individual's current status. The benefit amount paid and due can differ if there are changes in the beneficiary's status. For example, if SSA retroactively finds that a beneficiary had engaged in SGA during a past month and had already completed the TWP and grace period, the amount due will be zero, but the amount paid will reflect the benefit actually paid. Collection of overpayments in later months can result in the amount paid being less than the amount due. The BOND team plans to use the "amount paid" variable as the primary way of measuring the benefit cost to SSA. The BOND team will also test the sensitivity of the results to using the amount due variable and report whether any differentials exist. As discussed in Chapter Two, the BOND payment system seems likely to reduce overpayments; if so, the impact on benefits paid will likely differ from the impact on benefits due.

[41]   The BOND team will report impacts to SSA in a series of internal and external reports (see Chapter Eight for more details). To obtain timely information, the evaluation team will use the nearly complete data that are available from the MEF in August to provide SSA with preliminary findings. The evaluation team will validate

---

3.1.3   Other Administrative Sources

Finally, the BOND team will incorporate information from other administrative sources on State Vocational Rehabilitation Agency (SVRA) services, Medicare, and Medicaid participation. The RSA maintains administrative records on SVRA applicants and types of services provided to participants. The CMS maintains databases on the use of Medicare and Medicaid, including eligibility and claims information for both programs. The CMS Medicare data are available with a short lag (approximately six months), but the lags in obtaining the state VR and Medicaid data are much longer, 27 and 39 months, respectively.[42] This long lag means that information on most SVRA service and Medicaid outcomes will only be reported in later evaluation reports.[43]

3.1.4   Data Development and Quality

The BOND team will rely on variables from the administrative data sources above that have been used in previous reports for SSA and other agencies using linked TRF, CMS and/or RSA data (e.g., Thornton et al. 2007, Gimm et al. 2009, and Stapleton et al. 2010b). Based on previous experience, the data quality for the variables included in the analytic tables in subsequent chapters is very high, as most fields have relatively limited missing data and provide information that is important for operational purposes. The surveys described in the next section focus on information that is either not available in administrative records, or of inadequate quality.[44]

---

these findings against the complete data that are available in February of the following calendar year to ensure that no bias was introduced by using the earlier data.

[42]   RSA administrative records have approximately a 27 month lag in data availability. RSA records on VR participation only become available after a case is closed, and case closure may not occur until several years after service enrollment. For example, GAO found that individuals who receive services spend on average two to three years receiving services, and many are involved for longer; about 90 percent of individuals who begin SVRA services finish services within five years (GAO 2007). Medicare utilization and claims data are rolled up from various carriers and fiscal intermediaries and, by June of each year, 99 percent of the annual claims for the prior year are compiled. Thus, for instance, data from calendar year 2010 are likely to be essentially complete and available no later than July 2011. The Medicaid data also include eligibility, enrollment, and claims information, though there is a longer analytic lag of more than two years because these data are only updated after all state Medicaid agencies submit their files to CMS.

[43]   Assignment of Tickets to SVRA and Ticket payments to SVRA will be observed more quickly, via SSA data. A beneficiary can, however, obtain SVRA services without assigning his or her Ticket. In the future, SSA expects to receive more timely reports of entry into SVRA services even if the beneficiary's Ticket is not assigned to the SVRA as a result of regulations for the TTW program that were implemented in 2008. The RSA data will, however, still be the only source of information on services delivered and SVRA costs.

[44]   Education is an example of a low quality variable in administrative records; it is often missing because it does not pay an important role in most disability determinations or other administrative processes.

Exhibit 3-1.   Summary of Selected Variables from Administrative Files

Potential Variables	SSA Administrative Program Files (Ticket Research File)	SSA Earnings (Master Earnings File)	RSA and CMS Administrative Data
Beneficiary Characteristics			
Demographic characteristics (age, race, gender)	√		
Diagnosis, impairment status	√		
Historical program information	√		
Historical Earnings Information		√	
Program Participation and Earnings			
DI eligibility, SSI eligibility, benefit amounts, program exits	√		
Use of work incentives (IRWE, Ticket to Work)	√		
Earnings above SGA, TWP, and EPE	√		
Annual earnings		√	
Use of Any Vocational Rehabilitation Service	*		√
Type of Vocational Rehabilitation Service			√
Medicare eligibility	√		√
Annual Medicare expenditures and service utilization			√
Medicaid eligibility			√
Annual Medicaid expenditures and service utilization			√
Use of Medicaid Buy-In			√
Analytic Lag in Data Availability (for data through December 31)	**2 Months**	**9 – 14 Months**	**Varies**

Notes: The other administrative data include information from RSA, Medicare, and Medicaid administrative records that might be used in later reports. All lags are estimates based on previous work. The actual duration of the lags may be shorter, especially if improvements are made in data collection methodology, or longer, if RSA, Medicare, and Medicaid records are available with an estimated 6, 21, and 39 month lag, respectively.

* In the future, SVRAs may report service entry for all beneficiaries directly to SSA in a routine and timely manner.

3.2   Surveys

Although administrative records typically provide higher data quality at lower cost than surveys, they do not capture all of the information essential to evaluate BOND; as a result, the evaluation will administer surveys to study subjects to obtain data not contained in administrative records. For example, follow-up surveys of members of the Stage 1 and Stage 2 samples will collect information on barriers to

employment and work activities, recent work, customer satisfaction, and individual characteristics, such as health status.

Stage 1 has a single survey (36 months after random assignment), whereas Stage 2 has a baseline survey and two follow-up surveys (12 and 36 months after random assignment).[45] Each survey is designed to take less than one hour to complete. Both stages have a 36-month follow-up survey to track long-term outcomes of BOND subjects. Stage 2 also has a baseline survey to describe the volunteer population at random assignment and a 12-month follow-up survey to track short-term outcomes and customer satisfaction with demonstration services, especially EWIC as compared to WIC. An 80 percent or higher response rate is expected for all follow-up surveys (and 100 percent for the Stage 2 baseline survey).[46]

All Stage 2 baseline surveys will be conducted in-person using Computer Assisted Personal Interviewing (CAPI). All of the follow-up surveys for both stages will be conducted using a mixed mode approach—Computer Assisted Telephone Interviewing (CATI) with in-person CAPI as follow-up. The latter will be used for those who cannot or will not be interviewed by telephone. Follow-up interviewing will begin with a contact letter half a month before the relevant month and continue for four months. For example, for the 36-month survey, the effort to conduct an interview will begin with a contact letter in month 35.5 after random assignment, with the objective of completing the interview by month 40. Additional details for each survey are provided in **Exhibit 3-2**, including interview duration and mode, sample size and composition, and interview content.

The balance of this section provides more information on the surveys. Even more detail, including the survey instruments, appears in McInnis, Bell, and Ciemnecki (2010). First, we discuss the single Stage 1 survey at 36 months. Then, we discuss the three Stage 2 surveys—baseline, 12-month, and 36-month. This more intensive surveying of the Stage 2 sample is consistent with gathering more detailed information on samples that will, by design, have a much higher concentration of working beneficiaries than the Stage 1 samples.

Exhibit 3-2.   Questionnaire Content, Target Population, Interview Mode and Length for Stage 1 and Stage 2 Surveys

	Stage 1	Stage 2		
	36 month (45 minutes)	Baseline (55 minutes)	12 month (26 minutes)	36 month (30 minutes)
Interview Mode				
Type of interview	CATI/CAPI	CAPI	CATI/CAPI	CATI/CAPI
Groups Interviewed				
Target population	Subsample of Stage 1 T1 and C1-subjects	All Stage 2 Volunteers	All Stage 2 Volunteers	All Stage 2 Volunteers
Target sample size	10,000	12,600	12,600	12,600

---

[45]   Since Stage 1 random assignment will occur without contacting beneficiaries prior to random assignment, there will be no baseline survey of these subjects.

[46]   Only individuals who have completed the baseline will be randomly assigned at Stage 2.

	Stage 1	Stage 2		
	36 month (45 minutes)	Baseline (55 minutes)	12 month (26 minutes)	36 month (30 minutes)
Employment and Related Activities				
Return–to-work activities (job search, benefits counseling, education and training	√	√	√	√
Continuous employment history	Past 36 months	Past 12 months	Current or last job	Current or last job
Volunteer work	Past 36 months	Past 12 months	Current or last	Current or last
Employment and earnings of other family members	√	√		√
Barriers to employment	√	√		
Cost of working	√	√		√
Perceived ability to return to work; attitudes towards work	√	√		√
Employer attitudes; willingness to accommodate	√	√		
Training Programs				
Vocational rehabilitation	√			√
One Stop	√			√
Other	√			√
Health and Functioning				
Physical and mental health status	√	√		√
Activities of daily living and instrumental activities of daily living	√	√		√
Use of medical services and facilities				√
Current health insurance coverage		√		√
Total Income and Sources of Income				
Total income	√	√		√
Housing assistance	√	√		√
Supplemental Nutritional Assistance Program (SNAP)	√	√		√
TANF	√	√		√
Workers compensation	√	√		√
Disability insurance	√	√		√
Contextual Variables				
Detailed demographics (Race, education)	√	√		
Living situation	√	√	√	√
Availability of transportation	√	√		
Household income	√	√		√
Financial hardship				√
Household composition	√	√		√

	Stage 1	Stage 2		
	36 month (45 minutes)	Baseline (55 minutes)	12 month (26 minutes)	36 month (30 minutes)
Stage 2 Surveys Only				
Understanding of Work Incentives				
Understanding of and attitudes towards SSDI work incentives		√	√	√
Receipt and Satisfaction of Stage 2 Services				
Receipt of BOND support from counselors			√	√
Satisfaction with services			√	

3.2.1   Stage 1 Follow-Up Survey

The Stage 1 36-month survey will collect long-term outcome information on a randomly selected subsample of the Stage 1 subjects. (We discuss sample sizes immediately below.) The survey will include information on several outcomes that are important to evaluating impacts and measuring the benefits and costs of BOND, including employment and related activities (e.g., recent employment history, type of work, and barriers to work), participation in training programs (e.g., SVRA and One Stop), and total income. Additionally, the survey will include contextual information that is not included or measured well in the administrative data, such as education, race, and family composition.

The sample for the 36 month survey will include 5,000 beneficiaries randomly drawn from the 80,000 subjects in T1 and 5,000 randomly drawn from the much larger group of subjects in C1—expected to exceed 500,000. The random selection methodology for the two groups will be somewhat different because, by design, the two groups differ in two important respects: the percentage of current beneficiaries and the percentage of short-duration beneficiaries. The different methodologies will ensure that the two samples are comparable. The methodology for the C1 sample will be a modified version of the methodology for the T1 sample. The methodology to be applied to T1 is described first, followed by the modifications that will be used for C1.

The T1 sampling methodology will oversample T1 subjects most likely to benefit from the offset—namely those most likely to work. An econometric model developed from C1 data will be used to predict the likelihood of employment under current law for all T1 subjects. [47] The probability that a T1 subject is selected will be highest for those with the highest predicted probability of employment. This is likely to result in a sample in which the percentage of concurrent beneficiaries and the percentage of short-duration beneficiaries are each different than the corresponding percentages in the entire T1 sample.

---

[47]   The predicted probabilities will be based on a logit model estimated with C1 data for 2011. Employment will be defined as annual earnings in excess of $1,000, based on MEF data. The exact specification for the explanatory variables has not yet been developed, but the following variables are expected to be important predictors of employment: duration on the rolls, employment in the previous year for those on the rolls in the previous year, prior completion of the TWP, age, primary insurance amount (PIA), primary impairment, and sex. Although demonstration site or local area characteristics are likely to be predictive of employment, they will not be included in the model as doing so might lead to a survey sample with a cross-site distribution that is quite different from the cross-site distributions of T1 and C1 subjects. Differences in the distributions of individual characteristics across sites are likely to lead to some differences between the cross-site distribution of the survey sample and the cross-site distributions of T1 and C1 subjects.

The methodology for the C1 survey sample will use the same econometric model to predict the probability of employment for each C1 subject, but sampling will be stratified by SSI status and short-versus long-duration. The number sampled from each of the four strata defined by these two beneficiary characteristics will be the same as for the T1 sample. Within each stratum, the probability of selection will be highest for those with the highest predicted probability of employment.

Survey weights that make the weighted samples representative of the national population will be used to produce weighted means. Differences in weighted mean survey outcomes for the T1 and C1 respondents will estimate the impacts of the benefit offset on the means of those outcomes for the national beneficiary population.

3.2.2　Stage 2 Surveys

All beneficiaries who volunteer and are randomly assigned to any of the three Stage 2 demonstration cells will become part of the Stage 2 survey sample—12,600 individuals across all 10 sites; any reduction in the number of those surveyed will be a result of attrition.

Baseline Survey

The Stage 2 baseline survey will be used to collect information on background characteristics of volunteers that are not measured well in the administrative records. The baseline survey variables include recent employment history, current income, contextual information on demographic and family status, and an assessment of the subject's current understanding of SSDI work incentives and attitudes toward the demonstration. These detailed data will be used to describe the sample of volunteers, form subgroups for separate analysis, provide covariates in the impact analyses,[48] and help to adjust for non-response on the follow-up surveys.

Prior to random assignment, all volunteers must complete a baseline survey. Most of the volunteers will be invited to come to the local BOND office for a comprehensive intake and enrollment session with a specialist from the BOND team. After the BOND specialist explains the demonstration to a volunteer, the specialist will seek consent to participate in BOND. Those who volunteer will be interviewed in-person by a separate individual in the local BOND office. Immediately upon completion of the baseline interview, the volunteer will return to the BOND specialist for random assignment. It is expected that 65 percent of the Stage 2 baseline interviews will be completed this way. For those subjects who cannot easily come to the site office, the survey will be conducted in the subject's home or at another location that is more convenient for the beneficiary.[49]

---

[48]　For example, variables such as employed at baseline and use of other program services, which are likely correlated with key demonstration outcomes (especially employment) are likely to be used as explanatory variables in regression-adjusted analyses of impacts. As the characteristics for the treatment and control groups are expected to be very similar because of random assignment, the primary reason for using these explanatory variables is to increase the precision of the impact estimates.

[49]　A designated "circuit rider" will travel to remote locations to conduct intake. These circuit riders may meet with prospective subjects at a location that is convenient for the beneficiary. The intake and baseline survey administration procedures will be similar to those conducted in the BOND office.

12-Month Survey

The 12-month survey will collect information on short-term outcomes and participation with service providers, especially WIC and EWIC providers. The 12-month survey is designed to be brief (26 minutes) and collect information on employment outcomes, understanding of SSA work incentives, and receipt of, and satisfaction with, Stage 2 services (e.g., EWIC services).

36-Month Survey

The goal of the Stage 2 36-month survey is to collect long-term outcome information on Stage 2 volunteers. The survey questionnaire will include many of the same outcomes as the Stage 1 36-month questionnaire (e.g., employment and training), for use in the impact and benefit cost analyses. Additionally, the Stage 2 36-month survey will collect information on receipt of BOND services (e.g., WIC and EWIC) and understanding of work incentives that will be used in the process and participation analyses.

3.2.3   Data Development and Quality

As outlined in McInnis et al. (2010), there are three key components to collecting high quality BOND survey data. First, the use of computer-assisted telephone interviewing (CATI) and computer-assisted personal interviewing (CAPI) reduces errors in survey administration because skip patterns are automated so the interviewers do not need to follow complex skip patterns manually. Automated interview technology also prevents entry of invalid answers and prompts interviewers to validate or confirm critical data items such as income and earnings amounts. A second component is the use of experienced interviewers that are or will be trained specifically in interviewing persons with disabilities. Finally, the third component is the development of common materials for training all interviewers and other survey staff, regardless of the BOND survey on which they are working.[50]

3.3   BOND Operations Data System (BODS)

BODS will be used to support and track delivery of demonstration services to all BOND subjects. Although it is central to the implementation of the BOND treatments, it also will play a vital role in evaluation. BODS will support the following activities:

- **Random Assignment:** BODS will include data from SSA secured administrative extracts on prospective BOND subjects. The implementation team will use these data to randomly assign cases in Stage 1 and—for those who volunteer—Stage 2.

---

[50]   A key component of ensuring comparability in data collection is that Abt and Mathematica will collaborate on interviewer training so interviewers in each organization have the same preparation about the purpose and importance of the study, refusal avoidance techniques, data security protocols, documenting call attempts, and administering the interview. They will have the same training on assessing respondents' ability to complete the interview and use of proxies. Further, instructions for questions that are the same across the Stage 1 and Stage 2 instruments will be identical. The only difference in the interviewer training across the organizations will be related to differences in the Stage 1 and Stage 2 instruments.

- **Outreach and Recruitment:** BOND site offices will use BODS to track contacts with eligible beneficiaries, including outreach to Stage 1 treatment subjects and outreach and recruitment for those in the Stage 2 solicitation pool.

- **Earnings Reporting:** The BOND implementation team will use BODS to compile earnings information from BOND beneficiaries and transmit it to SSA to support adjudication of TWP completion, SGA determinations, and benefit adjustments.

- **Enhanced Work Incentives Counseling:** All counselors providing EWIC services to demonstration subjects will use BODS to record their contacts with beneficiaries and the services delivered.

- **Work Incentives Counseling:** Counselors providing WIC who operate in WIPA programs will use regular WIPA data collection procedures to track their contact with BOND subjects. Specifically, WIC providers that are WIPA agencies will enter data into an Effort to Outcomes (ETO) database, the contents of which will be transferred to BODS at appropriate points. All EWIC providers will enter their information directly into BODS. The data items on WIC in BODS will match the variables included in ETO so that direct comparisons can be made of EWIC and WIC services. WIC counselors who do not operate in WIPA programs will track their contacts with beneficiaries in BODS.[51]

- **Support Call Center:** The call center will record BODS information on its interactions with beneficiaries.

- **Support Data Collection:** The BOND team will use BODS to obtain contact information to support survey data collection activities and to conduct matches to other administrative data systems.

The BODS system includes program group identifiers for all prospective BOND subjects (i.e., for T1, T21, T22, C1, C2, and non-volunteers). The evaluation will use these variables to identify the analytic samples for all analyses. The BOND team will link this information to the administrative and survey files described above to obtain analysis files for the right samples. For example, to analyze SSDI program status of T1 subjects, BODS data indicating T1 group membership will be linked to SSA administrative data on SSDI program status.

3.3.1   Data on WIC and EWIC Services

BODS will include information on WIC and EWIC services. WIPA projects will provide benefits counseling to the C1 and C2 beneficiary groups based on existing SSDI program rules. WIPA projects that have been designated as BOND WIC providers will provide WIC services to T1 and T21 subjects based on the BOND rules and EWIC providers will provide WIC to T22 subjects based on the BOND rules.[52] As is described in more detail in Chapters One and Two, the EWIC services are an enhanced

---

[51]   As noted, data on WIC services collected via ETO will be added to the BODS counseling data for evaluation purposes. For simplicity, then, we consider these data to be part of the "BODS data" throughout the remainder of this document.

[52]   As will be described in more detail in Chapter Five, the BOND team will distinguish between the benefits counseling provided to treatment and control group subjects given that treatment subjects receive specific information on the BOND work incentive.

version of WIC services, including proactive outreach to beneficiaries, additional beneficiary assessments, job development and referrals.

As shown in **Exhibit 3-3**, BODS has been designed to collect information on WIC services provided to all BOND subjects. BODS will include data elements for the T1, T21, C1 and C2 groups, entered by counselors into the data system currently used by all WIPA projects. It will also include comparable information on the enhanced EWIC services, entered by EWIC counselors. [53]

Exhibit 3-3.   Counseling Variables for the Evaluation from the BODS

Information about Counseling Provided to All Treatment and Control Subjects
Random Assignment Identifier
Identifier for T1, T21, T22, C1, and C2 groups
Contact Details
Services provided (outreach, problem-solving and advocacy, work incentives analysis, and long-term support)
Amount of time providing services
Counseling services terminated
Beneficiary Assessment
Employment (employed, type of work, hours of work)
Beneficiary goals (plans to pursue education, stop receiving benefits, strategies for employment outcomes)
Other benefits (private health insurance, public health insurance, other cash supports [e.g., Unemployment Insurance, Temporary Assistance for Needy Families])
Knowledge and use of SSA work incentives (e.g., assigned Ticket, Trial Work Period, Extended Period of Eligibility, etc)
Work related training services (use of Vocational Rehabilitation, One Stop Career Centers)
Outcome of Counseling Contact
Working beneficiary outcomes (quit working, increased work hours, reduced work hours)
Non-working beneficiary outcomes (job search, job acceptance)
New or updated work incentives plan prepared
Percent for whom follow-up contact recommended
Additional Information on Enhanced Work Incentive Counseling (T22 group only)
EWIC Contact Details
Type of EWIC contact (telephone, e-mail, in person, in office, mail or somewhere else)
Amount of time providing services
EWIC Beneficiary Assessment
Barrier domains identified from barriers and needs assessment (health, employment, financial, other[a])
Vocational assessment

---

[53]   WIPA providers enter service documentation into their ETO data collection system. In the same manner, the WIC providers who are WIPAs will document their service provision in ETO. EWIC service providers will enter this information into the Beneficiary Tracking System (BTS), a subsystem of BODS. All WIC service providers will follow the same ETO protocols for entering information that WIPA agencies currently follow. EWIC service providers will document the benefits counseling portion of EWIC services in BTS, using the same data elements tracked in ETO.

Job Development and Referrals
Services planned as part of employment services plan (ESP) development (education, pre-employment skills training, unpaid work experience, placement in paid employment, other related work support[b])
Service referral
Pre-employment skills development
Employer partnership development
Referral to job placement organization
Job placement follow-up
Job retention follow-up

[a]   Other barrier domains include social, family, personal capacity, and other.

[b]   Other related work support includes job coaching, accommodation, job retention/post placement support, transportation, and other.

The variables common to counseling services provided to all BOND treatment and control subjects include contact details, beneficiary assessments, and outcomes of the WIC contact. BODS will also include additional information about EWIC services: type of contact (e.g., in person versus telephone), additional assessments (e.g., barriers to employment), and career exploration and referrals.[54] Because the latter information is not being collected from WIC counselors, it can only be used for purposes of describing the nature of the services provided by EWIC counselors, not how they differ from those provided by WIC counselors.

3.3.2   Data Development and Quality

The BOND team will continuously monitor BODS data throughout the demonstration and internal checks will be made to test data quality. The BOND team will test each of the variables in BODS to verify that its functionality matches the documented specifications (Bell, Sokol, Hoover and Thurston, 2010). These methods include manually testing elements and inspecting the underlying data to ensure that it has not been modified unexpectedly. The BOND team will also use data elements from BODS in management reports to periodically assess the reliability of the data items and, as necessary, provide feedback to sites on potential improvements.

3.4   Summary

Each data source will provide important information for the process, participation, impact, and benefit-cost analyses summarized in the subsequent chapters.

- The SSA administrative data sources will be used in all analyses because they provide the most comprehensive source of information on SSDI and SSI benefits, use of program work incentives, annual earnings, and basic demographic and impairment characteristics of prospective BOND subjects. These data will be especially useful in tracking use of the benefit offset and estimation

---

[54]   For example, the data entered by EWIC providers in BODS will include information on types of barriers to employment that were identified, such as health or employment-related barriers, or financial and other barriers. It will also include information on services that were planned as part of employment services plan development, such as education, pre-employment skills training, unpaid work experience, placement in paid employment, and other related work support.

of impacts on earnings and program outcomes (Chapter Six). The impact estimates derived from the administrative data will feed into the benefit-cost analyses (Chapter Seven). The administrative data also provide information that will support the qualitative data collection for the process analysis (Chapter Four).

- The survey data complement the administrative files by providing more in-depth information for impacts on outcomes of interest, such as hours worked, employee benefits, benefits from non-SSA programs, barriers to work, health, and functioning (Chapter Six). For Stage 2, survey data will provide detailed information on demographic and health background characteristics that can be used to describe the sample included in the analyses (Chapter Four). Additionally, the surveys provide information on understanding of benefits and satisfaction with service delivery that will be used in the process analysis for Stage 2 services (Chapter Four).

- BODS data provides information on BOND service delivery (offset and counseling services) that will be useful in assessing the process and costs of service delivery (Chapter Four), service utilization patterns for all treatment subjects (Chapter Five), and impacts on counseling-service outcomes (Chapter Six).

Chapter Four.   Process Analysis

The evaluation of the BOND interventions will encompass four components: process analysis, participation analysis, impact analysis, and benefit-cost analysis. This chapter describes the plan for the process analysis, emphasizing administrative procedures and results. The process analysis discussion here focuses on implementation of the intervention, the first step in the logic model that then engenders beneficiary participation and demonstration impacts, costs, and benefits. Chapter Five, on participation analysis, examines the intervention process as experienced by beneficiaries.

The BOND process study has two key objectives. First, it will provide detailed descriptions of each of the BOND sites. These descriptions will capture the diversity across sites on dimensions such as geography, local economic conditions, and the service delivery infrastructure and operations. They will also provide SSA and other key stakeholders with practical lessons on challenges associated with implementing BOND, as well as promising strategies to overcome them. Second, the process study will provide clear documentation of the program interventions, creating a foundation for interpreting estimated impacts and assessing the fidelity of the implementation of the intervention.

The process study focuses on the "input/process" and "output" components of the logic model presented in Chapter Two (see **Exhibit 2-8**). Explication of our plan for the study begins with a statement of the process research questions. These include:

- "Input/process" questions, concerning the local environment and how the demonstration processes were implemented;

- "Output" questions, about the extent to which the BOND enrollment and service processes function as designed (i.e., about the fidelity of the outputs to the normative model); and

- Research questions that involve both inputs and outputs.

This chapter begins by explicitly discussing the research questions. The chapter then describes the data that the BOND Evaluation team will collect in support of the process analysis. The chapter then turns to a detailed discussion of how the process study will use the collected data to address the research questions concerning intervention inputs/process and outputs.

4.1   Research Questions

The process study will address six broad questions. The first process study research question refers to the input/process component of the logic model:

1. How was the intervention implemented for Stage 1 and Stage 2 within and across sites with respect to, for example, project enrollment, operations, and service environments? How did the implementation of both stages change over time?

The next three questions refer to the output component, and concern the fidelity of the services delivered to those planned. Three different domains of activity are involved, related to intake, benefits computations, and work incentive counseling:

2. Were the recruitment and enrollment processes for Stages 1 and 2 implemented as designed? If significant deviations occurred, why did they occur?

3. Were the processes for reporting earnings, determining TWP completion, and making benefit adjustments for Stages 1 and 2 implemented as designed? How well did they perform?

4. For Stage 2, were WIC and EWIC services implemented as designed? To what extent did T22 (EWIC plus benefit offset) subjects receive broader and more intensive counseling services than T21 (offset-only) subjects?

The final two questions cut across the input/process and output components of the logic model:

5. What are the likely implications of the process findings for demonstration outcomes?

6. What are the lessons for national implementation of a benefit offset, future efforts to improve the design of SSDI, and broader disability policies?

To respond to these research questions, the process study will draw on a variety of qualitative and quantitative data sources gathered during the implementation of Stages 1 and 2. Information from diverse sources will support a rich picture of BOND—overall, across sites, and over time. Data sources include:

- **Quantitative Data Sources.** These data were described in detail in Chapter Three. They include the BOND baseline and follow-up surveys; Beneficiary Tracking System (BTS) within the BOND Operations Data System (BODS); and SSA administrative data. Data from these sources will be augmented by statistics from various national, state, and community databases. Examples of the types of information that will be obtained from these sources include basic demographic and economic characteristics of the site, employment and earnings patterns for SSDI beneficiaries, number of treatment individuals who are contacted by a benefits counselor, and information on the processing of earnings reports and benefit adjustments.

- **Qualitative Data Sources.** The analysis will also rely heavily on qualitative data gathered primarily via in-depth site visits during Stage 1 and Stage 2 implementation. The plan for collecting these data is described in detail below. Qualitative data sources include key informant interviews with staff of agencies involved in the demonstration, beneficiary focus groups, observations of demonstration activities, and agency documents and demonstration materials. Most of this information will describe the site environment, the administrative infrastructure, the implementation of demonstration processes, and the experience of those conducting and using these processes.

4.2   Site Visits and Qualitative Data Collection

Capturing the details of program implementation and identifying the variation between and within BOND sites requires systematic collection and syntheses of qualitative data from a range of respondents. This process study design includes a comprehensive data collection plan that is consistent across all sites but that can be tailored as needed to fit the particular circumstances of each. This section outlines the approach to data collection and analysis. The approach to data collection includes: (1) a description of the

purpose and focus of each round of site visits, (2) site visit preparation activities (for example, site visitor training and pilot site visit), (3) on-site data collection activities (for example, key informants, types of data collection, and data collection instruments), and (4) post-site follow-up and debriefing. This section also describes how the process study team will analyze the data and report process study findings.

4.2.1   Description of Site Visit Rounds

The BOND process analysis team will conduct seven rounds of site visits to each of the 10 sites during the course of the demonstration (see **Exhibit 4-1**). Site visits will occur both prior to implementation and once the demonstration is underway.

- **Pre-implementation.** The pre-implementation visit, conducted six months or less before the full implementation of BOND (i.e., in the first quarter of 2011, pending Office of Management and Budget clearance), will describe and document which agencies serve SSDI beneficiaries and the types of employment services available before the demonstration. This visit will provide a baseline for determining how the demonstration changes the services available to study participants.

- **Initial implementation.** The team will conduct a second round of site visits in September 2011, six months after full enrollment starts in April 2011, to document and assess start-up, recruitment, and planning. Site offices are expected to be fully operational at this time. During this round of site visits, researchers will gather detailed information about the demonstration structure and service delivery process. These visits will provide information about the fidelity of the recruitment process to the designed process and an early look at the fidelity of BOND services to their design.

- **Demonstration enrollment.** The process study includes two rounds of site visits to observe and document the Stage 2 enrollment process and the pre-enrollment process for volunteers (for example, random assignment and completion of the baseline survey), as well as any changes to the demonstration structure and service delivery processes. The first of these visits, conducted in September 2012, 18 months after the implementation of BOND, will include focus groups with treatment group participants. The site visit team will conduct a second round of visits six months later, to keep close watch on the demonstration enrollment process. The initial functioning of the earnings reporting, TWP determination, and benefit adjustment processes are of great interest.

- **Post-enrollment.** The site visit team will conduct site visits at 30, 42, and 54 months after enrollment starts. These visits will document any changes made to the structure and ongoing operation of the demonstration. Researchers will document: (1) the efforts of the EWIC to keep T22 subjects engaged in their employment efforts; (2) the process and timeliness of benefit adjustments for those who are working, including a first assessment of overpayments and underpayments and how they have been handled; (3) strategies used to serve beneficiaries who are dispersed throughout broad geographic service areas; and (4) the availability of funding for direct employment services and other work supports.

Exhibit 4-1.   Overview of the Site Visits

Type of Site Visit	Purpose of the Visit	Estimated Date(s)[a]	Focus Group Activities	Reporting Documents
Round 1: Pre-implementation	Document and describe the service environment prior to demonstration implementation	6 months or less before BOND implementation (first quarter of 2011)	None	Individual site summaries
Round 2: Initial implementation	Document and describe the demonstration structure and service delivery process, begin to assess fidelity	6 months after BOND implementation (September 2011)	None	Individual site summaries
Round 3: Demonstration enrollment #1	Document the enrollment process, describe demonstration evolution, assess enrollment and service fidelity	18 months after BOND implementation (September 2012)	Focus groups with treatment group participants	Individual site summaries; Stage 2 Early Assessment Report
Round 4: Demonstration enrollment #2	Demonstration updates, document any changes to the enrollment process, re-assess fidelity	24 months after BOND implementation (March 2013)	None	Individual site summaries
Round 5: Post-enrollment #1	Demonstration updates, re-assess fidelity, begin to interpret impact results and identify lessons learned	30 months after BOND implementation (September 2013)	Focus groups with treatment group participants	Individual site summaries; Process Study Report; Stage 2 First Interim Report
Round 6: Post-enrollment #2	Demonstration updates, assess fidelity, interpret early impact findings, identify lessons learned	42 months after BOND implementation (September 2014)	None	Individual site summaries; Stage 1 First Interim Report
Round 7: Post-enrollment #3	Demonstration updates, assess fidelity, interpret impact findings, identify lessons learned	54 months after BOND implementation (September 2015)	Focus groups with treatment group participants	Individual site summaries; Impact/Process Study Report; Stage 1 Second Interim Report; Stage 2 Second Interim Report

[a]   Assumes April 2011 BOND full implementation date.

In order to cover the broad geographic area in many of the sites, each site visit will last approximately three days. A designated researcher will conduct each visit, and a research analyst will accompany the researcher for the visits that include focus groups. To the extent feasible, the same researcher will conduct all rounds of site visits for a specific site, to facilitate direct observation of changes to the site over time.

4.2.2   Site Visit Preparation

Preparation for each visit will include several steps to gather information. These steps will ensure that all site visitors are well-prepared for the visit and that, as a team, all approach the visits in the same way. The senior site leader will schedule the visits and tailor site visit materials as needed to reflect each site's characteristics but without altering content. Preparation will begin roughly a month before each round of visits begins.

Pilot Site Visits

The task leader for the process study will conduct the initial site visit for each round of data collection to test the completeness and fluidity of the data collection interview instruments and observation guides. The pilot visit might result in minor adjustments to interview plans, other planned activities, and/or data collection tools. The process study leader will distribute the final site visit plans and tools during the site visitor training.

Site Visitor Training

Because understanding program operations requires experience and judgment, senior researchers will conduct the visits, with help from more junior research analysts. The process study leader will train all researchers and analysts during a half-day meeting prior to each round of visits. During the training, site visitors will be trained on the objectives of the study, background on each of the sites, guidelines for setting up the visits and scheduling activities, data collection tools, the process for completing the visits, and the format for writing up site visit notes. To ensure all site visitors collect the same information and use the same data collection process across sites, the process study leader will distribute a standardized checklist of the steps for the pre-planning, onsite activities, and post-visit follow up. Training will also prepare site visitors to use a common set of forms and tools for data storage and analysis.

Planning Calls with Sites

To schedule the visits, the site visitors will contact the director of the BOND site office by phone using a standard telephone interview guide. The purpose of these calls is to obtain a "lay of the land" or basic description of the sites in order to determine whom to interview while on site and to tailor the interviews and data collection activities and instruments to the site. Where feasible, BOND site office staff will help coordinate the visit schedule and the visits will be scheduled for dates when there are opportunities to observe BOND activities.

4.2.3   On-Site Data Collection Activities

The site visits will include a variety of activities with a range of key informants, as needed to create a comprehensive and complete picture of BOND's implementation. Multiple perspectives will help ensure accurate interpretation of the information collected and consistency across the study sites. The following describes the key informants to be interviewed, the types of on-site data collection activities, and the data collection instruments.

Key Informants

While on-site, senior researchers will interview the following key informants:

- **BOND site office director and staff** who are responsible for demonstration planning and for coordinating the initial and ongoing implementation of BOND (for example, outreach and recruitment specialist, BOND specialist, and mobile BOND specialist). These individuals are also responsible for all recruitment, enrollment, and research activities (such as baseline surveys, random assignment, and preventing contamination or crossovers) at the site.

- **Federal, regional, and area office SSA personnel** who are involved with the design and oversight of the BOND demonstration, as well as those who process the work reports and calculate SSA benefits for beneficiaries eligible for the offset.

- **Operators of the earnings processing center** who collect and review earnings and IRWE information from BOND subjects and prepare it for submission to SSA.

- **Employment service provider managers and front line staff** who serve demonstration participants and offer general employment-related services. These include agencies providing WIC and EWIC services and agencies to which EWIC counselors may refer beneficiaries for job readiness, placement, and retention services.

- **State and local government agency and private/nonprofit representatives who serve people with disabilities**, including staff from SVRA, ENs serving beneficiaries in the site, and various other community-based organizations that support working-age people with disabilities.

- **State and local advocates** for working-age people with disabilities.

- **Beneficiaries** assigned to the Stage 2 treatment groups.

Types of Data Collection Activities

The process study incorporates a variety of data collection activities to capture the diversity of the BOND demonstration sites. Site visitors will conduct the majority of interviews with individuals or small groups of respondents. For the specialized interviews, such as the case flow and case review interviews, the site visitor will rely on information from those who work directly with the participant, such as the BOND site office staff or WIC and EWIC providers. Other types of data collection activities and the information gathered are described below.

- **Individual and small group interviews.** Site visitors will conduct interviews with one person or in small groups of two or three staff. Types of interviews include:
  - **Descriptive interviews** will gather information about: 1) the site context, including basic background and service delivery structure; 2) the initial and ongoing implementation of BOND and how decisions are made and the factors that influenced them; and 3) experiences with and perceptions of benefit offset services and work incentives counseling. These interviews will cover Stage 1 and Stage 2 implementation.
  - **Case flow interviews** will focus on the steps involved in the service delivery process. Beginning with recruitment, various informants will describe the process of enrolling

participants, random assignment, conducting the baseline survey, referring them to a WIC or EWIC, and providing work incentives counseling. This series of interviews will provide a clear description of the pathway that the BOND subject takes from first contact with the demonstration all the way through use of the benefit offset.

– **Case review interviews** will capture detailed information about the intensity and types of services WICs and EWICs provide for Stage 2 treatment group participants. WIC and EWIC counselors will describe the last case they worked on as well as one or two others of their choosing, including all the information, contacts, and services provided to the beneficiaries, and how long and how often they worked with the case.

- **Focus groups.** Site visitors will conduct focus groups with Stage 2 treatment group subjects in each of the 10 sites during three rounds of site visits—the first demonstration enrollment visit and two of the post-enrollment visits. In each site, the team will conduct two focus groups, one with T21 subjects and one with T22 subjects. These will support comparison of the counseling received on dimensions such as the types of services provided, intensity, and usefulness.

- **Observations.** Where possible, direct observation will aid in understanding how the demonstration is unfolding. Examples of activities to be observed include demonstration intake interviews between the site office staff and Stage 2 volunteers, WIC and EWIC counseling sessions, and phone calls on earnings/benefit adjustment issues. These will be built into the site visit schedule as time permits.

- **Case processing reviews.** The researchers will review the processing of records for a sample of cases in which the demonstration receives earnings information from treatment subjects and prepares information for submission to SSA. Qualitative findings about process issues will serve as the basis for selection of reviews for the purpose of illustrating the nature and severity of the issues. Each review will cover all pertinent aspects of the case, from initial submission of information by the subject through all actions taken by SSA and any appeals.

- **Document review.** The site visits also provide an opportunity to gather any demonstration-related documents from the site office, SSA field offices, WIC and EWIC providers, and local advocacy groups, among others. Documents might include recruitment materials, intake forms, screening and assessment tools, marketing tools, and brochures describing the employment services/resources available to sample members.

Data Collection Instruments

The process study leader will develop semi-structured discussion interview guides for each type of interview and group discussion. Since site approaches will vary, the interview guides will be tailored for each site. The results will be protocols flexible enough to account for what is unique at each site, but structured enough to capture consistent information across sites. The main topic areas are described below. **Exhibit 4-2** displays which topics will be considered in each site visit round.

- **Site background.** Documents the demographic and economic environment prior to and after the demonstration is implemented.

Exhibit 4-2.   Key Research Topics by Round of Process Study Site Visit

	Round 1: Pre-Implementation	Round 2: Initial Implementation	Round 3: Demonstration Enrollment #1	Round 4: Demonstration Enrollment #2	Round 5: Post-Enrollment #1	Round 6: Post-Enrollment #2	Round 7: Post-Enrollment #3
Site Background	X	X	X		X	X	X
Current Services Available to SSDI Beneficiaries	X	X		X		X	
Agencies Involved with Demonstration Planning and Initial Implementation		X	X				
Demonstration Site Recruitment, Planning, and Startup		X	X				
Sample Selection, Recruitment, and Enrollment		X	X	X	X		
Development and Structure of Demonstration		X	X	X	X	X	X
Demonstration Service Delivery		X	X	X	X	X	X
Participation Patterns and Experience			X	X	X	X	X
Communication, Coordination, and Interagency Relationships		X	X	X	X	X	X
Monitoring and Tracking		X	X	X	X	X	X
Assessment of the Demonstration Implementation		X	X	X	X	X	X
Successes, Challenges, and Lessons Learned					X	X	X

- **Current services available to SSDI beneficiaries.** Describes the availability and accessibility of benefits counseling services, employment and training resources, and other initiatives for individuals with disabilities prior to and after the demonstration is implemented.

- **Agencies involved with demonstration planning and initial implementation.** Documents the types of agencies involved in the BOND demonstration planning and initial implementation for Stage 1 and Stage 2 and the level and nature of their involvement.

- **Demonstration site recruitment, planning, and startup.** Describes how each of the sites defined operational policies and procedures, identified and selected contracted service providers, and rolled out demonstration activities.

- **Sample selection, recruitment, and enrollment.** Describes the process for implementing Stage 1 and Stage 2 recruitment, demonstration enrollment, and intake and baseline survey activities.

- **Development and structure of the demonstration.** Captures a detailed description of the EWIC and WIC providers including organizational background, administrative and staffing structure, types and amount of services provided, and service capacity before and after demonstration implementation.

- **Demonstration service delivery.** Provides a detailed description of the service delivery process for Stage 2 treatment group participants assigned to WIC and EWIC service and the service delivery process for control group participants. Topics addressed include outreach and recruitment, assessment, benefits counseling, case management, and referrals made to employment service providers for job readiness and placement activities. Information will be used to compare the level and types of services available to the WIC and EWIC treatment groups.

- **Participation patterns and experience.** Documents Stage 2 WIC and EWIC treatment groups' understanding of and experience with BOND program features and services.

- **Communication, coordination, and interagency relationships.** Captures information about the formal contracts and agreements in place to operate the demonstration as well as the formal and informal communication and coordination between and among agencies.

- **Monitoring and tracking.** Documents the systems and processes for monitoring and tracking BOND subjects for Stages 1 and 2.

- **Assessment of the demonstration implementation.** Describes and assesses the quality and fidelity of the demonstration implementation for Stages 1 and 2.

- **Successes, challenges, and lessons learned.** Collects information about the strengths and limitations of the BOND site as well as the key successes, challenges, and lessons learned in operating the demonstration.

The focus group discussion guide also includes a range of semi-structured interview questions. This protocol includes fewer questions than the individual interview guides since the goal is to encourage interaction and discussion on a few key topics. Some of the topics to be examined using the guide include questions related to the enrollment process, work incentives counseling, and filing of earnings reports.

Standardized observation guides will be used to record details of the type of activity observed, its purpose, and its intended outcomes. For example, the guide for the standard intake process will include

the steps that staff must take to complete intake. The observer will be able to directly record what actually happens relative to what is expected to happen.

4.2.4   Follow-up and Debriefing

Once the study team returns from a visit, they may have additional questions or may need to interview someone who was not available at the time of the visit. Site visitors will complete these interviews or gather additional information by telephone or e-mail after the site visit.

The process study team will hold weekly conference calls throughout the data collection period, to discuss the site visits. This meeting will be used to address any issues about the data collection process and to begin identifying cross-site themes. After each round of site visits, the project team will hold several brainstorming sessions to discuss the overarching impressions and themes from the visits. The process study leader will develop an agenda for each call. The weekly calls will last roughly an hour, while the brainstorming sessions will last between 1 1/2 to 2 hours.

4.2.5   Preliminary Analysis

After each site visit, researchers will compile their notes into a descriptive internal site profile, using a coding scheme (or assigning a label to a section of data) that maps closely to the key topics included in the research interview guides. For each topic, the researchers will document what was learned from each respondent, indicating where respondents reach similar conclusions or where there were discrepancies from the different respondents. Where there are discrepancies with respect to a process or item for which the analysis plan requires consistency, the researcher will contact the appropriate person at the site to resolve the discrepancy.

For focus groups, the analyst will transcribe and code the data. The information from each group will be used to better understand the implementation of BOND within the relevant site. Cross-site analysis will generate a broader picture of the experiences of treatment subjects, and how they believe the offset, or the offset in combination with benefits counseling, has influenced their employment and earnings.

A qualitative software tool, Atlas-Ti, will be used to analyze the information for each round of site visits. This tool facilitates the identification and development of patterns and themes, both within and across sites. Data will be stored in a centralized database, where it can easily be accessed as needed to respond to queries or compare to newly acquired information.

4.2.6   Descriptive Site Visit Summaries

The lead researcher for each site visit will generate a site visit summary report after each visit and deliver all of the summaries to SSA within two weeks of the last site visit completed for that round. Each report will provide an overview of site visit activities and a brief summary of key findings. The reports will be stripped of confidential information, including the names of interview respondents and focus group participants. They will use a standard template to ensure consistent reporting across sites. Key informants may review the memorandum for accuracy.

The process study task leader or other senior member of the BOND evaluation team will review each site summary to check for the internal consistency and completeness of the information. They may point out where information in one section of the document contradicts findings in another section. The reviewer

will also point out where more information is needed on a particular topic. These quality checks will help ensure the summaries are consistent and complete across all sites.

4.2.7   Cross-Site Memoranda

After each round of the site visits, the researchers and process study leader will write an internal memorandum summarizing key themes and findings across the sites. Data for the cross-site memoranda will include key findings from qualitative data analysis using Atlas-Ti and existing quantitative participation and service use data (for example, BODS, SSA administrative data, and BOND baseline and follow-up surveys). These documents will be made available to the evaluation and implementation teams for several purposes:

- The process study team will use the cross-site memorandum to prepare for the next round of site visits. This will help identify new topic areas for the data collection interview and observation guides. It will also serve as a refresher for the site visit team regarding the key findings and implementation challenges from the previous round of visits.

- The operations team may use the cross-site memorandum as feedback for monitoring the demonstration service and evaluation components. If necessary, the operations team may make a mid-course correction to ensure the best possible service implementation and test of the intervention.

- The evaluation team will use this document to compile process analysis findings for the project reports that include implementation analyses. The impact evaluation team may also find this ongoing record of the sites' implementation progress useful in attempting to interpret early impact findings (see Chapter Nine for a discussion of possible cross-cutting analyses among the different evaluation components).

The cross-site memoranda will be written to protect the confidentiality of those interviewed.

4.3   Input/Process Analysis

This section describes how the team will use the qualitative and quantitative data to address the input/process question posed in Section 4.2: How has the intervention been implemented within and across sites, and how has the implementation changed over time? The top section of **Exhibit 4-3** summarizes the data sources for addressing this research question. The answer will be in the form of a comprehensive description of BOND's implementation.

Researchers will use the process study data to analyze and document the implementation of BOND across the study sites throughout the demonstration period. These findings will inform our understanding of the experiences of site office staff, WIC and EWIC providers, community partners, and beneficiaries participating in the BOND demonstration. Interviews, observations, participant focus groups, and program materials will play a role in describing the implementation of BOND within the study site. Statistics from BODS; SSA administrative data; and national, state, and community databases will supplement this material. Five primary areas will be examined:

Exhibit 4-3. Data Sources and Topics Used to Answer Process Study Research Questions

Research Topics	Program Documents	Key Informant Interviews	Beneficiary Focus Groups	Observation of Demonstration Activities	Baseline and Follow-Up Surveys	BTS, BODS Data	SSA Administrative Data	National, State, and Community Databases
DESCRIBE THE IMPLEMENTATION OF BOND								
Demonstration Site Selection, Planning, and Startup	X	X						
Demonstration Context	X	X	X		X		X	X
Beneficiary Notification (Stage 1) and Recruitment (Stage 2)	X	X		X	X	X		
Development and Structure of EWIC and WIC Organizations	X	X						
Accessing the Benefit Offset	X	X	X		X	X		
FIDELITY TO DESIGN AND DIFFERENCES BETWEEN WIC AND EWIC SERVICES								
Recruitment and Enrollment Processes	X	X	X	X	X	X		
Earnings Reports and Benefit Adjustments	X	X	X	X		X		
WIC and EWIC Services	X	X	X	X	X	X		
INTERPRET IMPACT RESULTS								
Interpreting Impact Findings		X		X				
IDENTIFY LESSONS FOR IMPLEMENTATION, POLICY AND FUTURE RESEARCH								
Lessons Learned		X				X		

- Demonstration site selection, planning, and startup. Based primarily on the first two site visits, the team will develop detailed documentation of the site baseline and how it changed with the implementation of BOND. This documentation will include descriptions of the administrative and staffing structure, service delivery process, and the early implementation challenges and lessons learned. It will also include documentation of how and why decisions were made and the range of options considered.

- **Demonstration context.** Understanding the site environment may help explain what factors influence the BOND implementation, level of fidelity to the BOND model, and ability of sites to achieve impacts. This analysis will rely on descriptive data from the site visits and quantitative data from BODS (for example, demographic characteristics of treatment and control groups); SSA administrative data (for example, number of SSDI and concurrent beneficiaries; demographic characteristics of SSDI/concurrent beneficiaries such as gender, race/ethnicity, age group, disabled adult child, and primary and secondary diagnoses; number of beneficiaries; number of beneficiaries working; and use of Ticket-to-Work prior to BOND); and national, state, and community databases (for example, population density; employment and unemployment statistics; and measures of the population's socioeconomic status, education, and income statistics).

- **Beneficiary notification, recruitment, and enrollment.** The team will document in detail notification, recruitment, and enrollment processes. This documentation will include descriptions of the level and types of community outreach. For Stage 1, this includes the process for mailing letters and informing respondents about the demonstration. For Stage 2, it includes the recruitment and enrollment process, staffing capacity, types and amount of information disseminated, involvement of community partners, and subjects' perceptions of the recruitment and enrollment process.

- **Development and structure of EWIC and WIC organizations.** A key component of the process study is description of the provision of EWIC and WIC services for Stage 2 treatment groups. The research team will use qualitative data gathered onsite to describe the structure and process for providing EWIC and WIC services. These data will include background on the WIC provider and other organizations that may have been considered as potential EWIC providers (gathered in the first site visit), and information on selection of the EWIC provider (gathered in the initial implementation site visit). Later visits will provide the information needed to assess organizational capacity to provide timely EWIC and WIC services and the quality of the service provided. Information gathered from focus groups of beneficiaries as well as the interviews with site office and provider staff will play an important role in developing the findings.

- **Accessing the benefit offset.** Analysts will use site visit information to document the operations of the processes established to obtain earnings information, support TWP determinations, support benefit adjustments, and help treatment subjects understand the notices they receive from SSA.

Initial problems with implementation inputs are to be expected, and may be identified in the early site visits. Subsequent site visits, and later reports will explore the extent to which earlier problems have been addressed and how.

Cross-site variation in implementation inputs is also expected. The process analysis will highlight notable variations across sites. It will also consider whether site characteristics correlate with different patterns of intervention inputs—characteristics including (1) site size, (2) geographic distribution of beneficiaries, (3) economic climate, (4) availability of resources for individuals with disabilities (for example, SVRA and EN services, One Stop Employment Centers, disability support organizations), (5) level and types of involvement from community partners, (6) accessibility of counseling services for treatment and control subjects, (7) access to Medicaid Buy-in (MBI) programs, and (8) local receptivity and support for BOND. It will not be possible to establish causality, however, with just 10 sites and eight or more characteristics to consider. However, the interpretation key informants put on linkages between site characteristics and intervention implementation will provide useful hypotheses for possible later, larger studies of the implementation of BOND-like provisions.

4.4   Assessing the Fidelity of BOND Outputs

The BOND *Design Report* describes the normative model (the process as designed) for the intervention to be delivered by the demonstration, including activities in three realms: (1) recruitment and enrollment, (2) implementation of the benefit offset, and (3) provision of counseling services. The process study will document the outputs from these processes, assess their fidelity to the normative model, and describe what each process actually delivers. This section describes—for all three realms—the fidelity indicators and approach to analysis that the research team will use.

4.4.1   Fidelity Indicators

The evaluation will rely on a mix of qualitative and quantitative fidelity indicators that will be developed from a variety of data sources, as described below. The team will use the same set of indicators, derived from the normative model, for each round of site visits, to support assessment of variation in fidelity across sites and over time. This assessment will begin with the initial implementation visit, roughly six months after full demonstration enrollment begins (i.e., September 2011).

Recruitment and Enrollment

The BOND *Design Report* outlines detailed steps for Stage 1 and Stage 2 recruitment and enrollment activities, steps that are summarized in Chapter One of the current plan. For Stage 1, the recruitment and enrollment process is limited to letter notification and follow-up with a select group of participants who may be working.

For those in the Stage 2 solicitation pool, the recruitment and enrollment process is more complex. It begins with a letter sent to solicitation pool subjects inviting them to volunteer for BOND. The letter will ask an SSDI beneficiary to call the BOND site office or return a postage-paid postcard to indicate whether or not he/she is interested in participating. For those who return the postcard, the BOND site office will follow-up with a phone call in which a staff member will provide more information about BOND, confirm eligibility for Stage 2, provide information to help the beneficiary decide whether to volunteer, and schedule an enrollment session. The purposes of the enrollment session are to answer questions the potential volunteer may have about BOND, obtain informed consent, complete the baseline interview, and conduct random assignment. This random assignment step will assign all Stage 2 volunteers to one of three groups—Stage 2 offset-only treatment (T21), Stage 2 offset-EWIC treatment (T22), or Stage 2 control (C2).

Exhibit 4-4 presents the qualitative and quantitative indicators that will be used to examine each of the following components of these processes: (1) community outreach, (2) beneficiary outreach, (3) enrollment session attendance, (4) informed consent, (5) baseline survey, and (6) random assignment. The first two elements (community outreach and beneficiary outreach) apply to both Stage 1 and Stage 2 subjects, and the remaining elements refer to Stage 2 subjects only. Key interview respondents and observations of enrollment activities will provide the primary sources of information for the qualitative indicators. BODS data and baseline and follow-up surveys will be the primary sources of data for the quantitative indicators.

Exhibit 4-4.   Recruitment and Enrollment Fidelity Measures

Demonstration Elements	BOND Model	Qualitative Indicators	Quantitative Indicators
STAGE 1 IMPLEMENTATION			
Community outreach	Outreach to local advocacy groups, service providers, and general public about BOND Distribute written materials about the demonstration and provide a single point of contact in BOND team	Description of outreach process (e.g., which organizations, how often, format of outreach) Description of written materials (e.g., main message, content, visual quality) Availability of qualified staff to complete community outreach	
Beneficiary outreach	Letter sent to T1 subjects explaining new benefit offset rules and how it will affect their income Second letter sent and telephone call made to those who don't respond and who appear to be working based on SSA data Create and inform treatment group about: (1) BOND website, (2) BOND call center, (3) BOND site offices	Timing and description of letters sent to T1 subjects Timing and description of follow up letters Timing and description of follow up telephone calls to subset of beneficiaries who appear to be working (e.g., number of calls, timing, and frequency of calls) How subjects are informed about and use: (1) BOND website, (2) BOND call center, (3) BOND site offices Availability of qualified staff to complete beneficiary outreach	Mailing completed by June 2011
STAGE 2 IMPLEMENTATION			
Community outreach	Outreach to local advocacy groups, service providers, and general public about BOND Distribute written materials about the demonstration and provide a single point of contact in BOND team Notification of local stakeholders and advocacy groups about Stage 2 mailing and outreach schedule	Description of outreach process (e.g., which organizations, how often, format of outreach) Description of written materials (e.g., main message, content, visual quality) Process, timing, and level of effort made to notify stakeholders and advocacy groups about Stage 2 mailing and outreach schedule Stakeholder awareness of BOND Availability of qualified staff to complete community outreach	
Beneficiary outreach	Letters sent to solicitation pool describing how offset works, how it will affect income, that participation is voluntary, random assignment, and EWIC services Follow up calls for those who return a postcard and those who do not respond	Timing and description of letters sent to solicitation pool Information provided about demonstration (e.g., voluntary, random assignment, offset features) Subject's perceptions about outreach and	Mailing completed no later than September 2012

Demonstration Elements	BOND Model	Qualitative Indicators	Quantitative Indicators
	Create and inform treatment groups about: (1) BOND website, (2) BOND call center, (3) BOND site offices	awareness of BOND components	
		How subjects are informed about and use: (1) BOND website, (2) BOND call center, (3) BOND site offices	
		Availability of qualified staff to complete beneficiary outreach	
Enrollment	Meet with BOND team who describes the demonstration, provides examples of how it works and other benefits that may be affected	Timing and description of enrollment process	
		Information presented to BOND subject	
	Meeting held in BOND site office or alternative locations for those with travel restrictions due to health and/or distance	BOND staff provides examples of how offset works	
		BOND staff asks about other disability benefits	
		BOND staff offers alternative locations for those under travel restrictions or who are far away from the site offices	
		Availability of qualified staff to complete enrollment	
Informed consent	Subjects informed that their participation is voluntary	Process for obtaining informed consent	
	Asked to sign a consent form	Subject awareness that participation is voluntary	
Complete baseline survey	BOND team administers baseline interview	Timing of baseline survey	100% completion of baseline surveys
		Disruptions in completing baseline interview	
Random assignment	Beneficiaries randomly assigned to T1, C1 or the solicitation pool	Subjects notified of group assignment orally and in writing	
	Volunteers randomly assigned to one of three groups (two treatment and one control)	T21 subjects informed about WIC services	
	Subjects notified of random assignment results orally and in writing	T22 subjects informed about EWIC services	
	T21 subjects informed about WIC services	EWICs notified weekly about beneficiaries assigned to T22 group	
	T22 subjects informed about EWIC services	Evidence of contamination or crossovers	
	EWICs notified weekly about beneficiaries assigned to T22 group		

Benefit Offset Processes

Under the demonstration, BOND site offices, the BOND Call Center, and the BOND Processing Center are to facilitate submission of subjects' earnings information to SSA to support TWP determinations and benefit adjustments. The process evaluation will assess how well the processes established for this purpose are actually functioning. This assessment will examine: the burden of the reporting process on beneficiaries; processing efficiency; timeliness; errors; and resolution of errors and disputes. Interviews of key informants, case reviews, and quantitative process measures, as summarized in **Exhibit 4-5**, will provide the basis for the assessment.

Site visitors will collect information on resources available to beneficiaries for reporting earnings—the BOND website, call center, site office, and processing center. Information to be collected includes the accessibility of the website, wait times for the call center, the hours of operation, and the helpfulness of the staff in responding to questions. To directly experience using the call center, without revealing their identity, a member of the process study team, will randomly call the center at different times and days to ask for basic information, similar to the way a beneficiary would. Team members will also collect information about the accessibility of the BOND site offices and the availability of staff to meet with beneficiaries by phone or in-person, with particular attention to accommodations made to help beneficiaries who are unable to visit the BOND office.

Visitors will also ask BOND site office, call center, and processing center staff, as well as SSA benefits processing staff, to describe and critique the processes in which they are engaged. Problems identified via BODS (e.g., lengthy processing times) will provide the basis for selecting cases for review. The evaluation team will also ask staff to provide information for cases that illustrate problems they or others identify.

Random Assignment

As shown in **Exhibit 4-6**, the BOND team will assess the random assignment process by comparing the baseline demographic, program, and earnings characteristics of treatment and control subjects within each stage. This exhibit shows the variables from administrative records that are available for both stages. The Stage 2 assessment will also incorporate information on several additional variables from the Stage 2 baseline survey, including employment and related activities, training programs, health and functioning, and other contextual variables (e.g., education).

The set up of the random assignment for Stages 1 and 2 should ensure that the characteristics of the randomly assigned program groups will differ from one another in measured (and unmeasured) background characteristics only through chance. Hence, if random assignment is well implemented, the expectation is that the number of statistically significant differences in the characteristics across T1 and C1 subjects and across T21, T22, and C2 subjects will be minimal.[55]

---

[55] Given the number of statistics to be compared, random assignment will likely result in two or three statistically significant differences in pairwise comparisons using a 0.05 significance level. Hence, we will also conduct a joint F-test of the null hypothesis that the two samples match in all of their measured background characteristics.

Exhibit 4-5.   Fidelity Measures for Benefit Offset Processes

Demonstration Elements	BOND Model	Qualitative Indicators	Quantitative Indicators
T1, T21, and T22 beneficiaries report earnings and IRWE information to the demonstration	Treatment subjects (Stages 1 and 2) will report earnings and IRWE information to the BOND site office, call center, or website as needed for multiple purposes.* C2 subjects will report earnings for TWP determinations only.	Assessment of accessibility of resources for reporting earnings. Accuracy and usefulness of content. Treatment subject assessments.	Number of submissions from each group. Number and types of follow-up needed to correct problems. Earnings for C2 subjects reported prior to TWP completion but not later.
T1, T21, and T22 earnings reports processed	BOND staff will collect, review, and submit treatment subject's earnings to SSA for multiple purposes.* Earnings for C2 subjects will be processed to support TWP determinations only.	Case review findings** Demonstration staff assessments.	Number and type of requests from SSA for additional information. Number and size of payment corrections. Processing time.
T1, T21, and T22 TWP status determined	SSA makes TWP determinations for treatment and C1 and C2 subjects.	Demonstration and SSA staff assessments. Treatment subject assessments.	Number of determinations completed for each group. Processing time. Number and type of appeals.
Benefits adjusted	SSA uses automated process to adjust benefits for treatment subjects (Stages 1 and 2).	SSA staff assessments.	Processing time. Frequency of non-automated adjustments. Number and size of payment corrections. Appeals filed, by resolution.
Benefits reconciled	SSA reconciles benefits for treatment subjects based on IRS earnings reports and earnings and IRWE documentation from the beneficiary.	Demonstration and SSA staff assessments. Case reviews.	Duration from end of year to reconciliation. Frequency and size of year-end adjustments. Appeals filed, by resolution.
Notifications	SSA notifies treatment beneficiary of all actions and C1 and C2 subjects of all TWP-related actions. BOND site office and call center help clarify for beneficiaries.	Review of notice language. Treatment subject and demonstration staff assessments. Case reviews.	Number and type of requests for clarification.
Appeals	Treatment and C2 subjects file appeals of notifications described above with assistance from BOND site office or call center staff. SSA makes decision and takes follow-up action.	Treatment subject and demonstration staff assessments. Case reviews.	Number and type of appeals filed. Duration to resolution.

*   Purposes include TWP determinations, benefit adjustments, and year-end reconciliation.

**   Case reviews will focus on completeness, correctness and timeliness of information collected from beneficiaries, submitted to SSA, and actions taken by SSA. In general, sampling for case reviews will be strategic, reflecting information about problems and the importance of the relevant process. Random sampling will be used when needed to ensure an unbiased assessment of process.

Exhibit 4-6.   **Assessment of Characteristics following Random Assignment**

Characteristics at BOND Entry	C1	T1	Difference	T21	T22	C2	Difference
Sample Size (N)							
Title							
SSDI only Concurrent (T1 and C1 only)							
Gender							
Male Female							
Age in Years							
< 25 25 – 29 30 – 34 35 – 39 40 – 49 50 – 64							
Years on Disability Rolls							
0 – 1 year 2 – 3 years 4 – 5 years 6 – 7 years 8 – 9 years 10+ years							
Race / Ethnicity							
Asian/Pacific Islander Black (not Hispanic) Hispanic Native American/Alaskan White Other Missing							
Primary Impairment and Blind Status							
Mental disorders[a] Neoplasms Diseases of circulatory system Musculoskeletal system and connective tissue Nervous system and sense organs Other[b]							
Benefit Amount							
$0 $1 – $500 $501 – $750 $751 – $1,000 $1,001 - $1,250 $1,251 - $1,500 $1,501 - $2,000 > $2,000 Missing							

Characteristics at BOND Entry	C1	T1	Difference	T21	T22	C2	Difference
Completed TWP							
Completed TWP Prior to 2007 Completed in 2007 Completed in 2008 Completed in 2009 Completed in 2010 Never Completed							
Pre-enrollment Earnings							
I year prior to enrollment 2 years prior to enrollment 3 years prior to enrollment							
TTW Enrollment							
Yes No							
Medicaid Buy-in Enrollment							
Yes No							
BOND Site							
Northern New England Western New York Greater Detroit Wisconsin Alabama South Florida Greater Houston DC Metro Colorado, Wyoming Southeast California							

Source: TRF and MEF

Note: Impairment groups are those expected to contain at least 5 percent of T1 subjects, and will be modified as appropriate given actual impairment distributions. All categories are mutually exclusive. Additional data will be added for Stage 2 comparisons from the Stage 2 baseline survey. These variables include information on employment and related activities, training programs, health and functioning, and other contextual variables (see Exhibit 3-2 for more details). Estimates will be weighted to reflect different sampling weights for short and long duration groups. Standard errors for each statistic will appear in parentheses below each statistic, and p-values will appear below each difference.

If differences emerge that appear unlikely to be explained by chance, we will investigate the random assignment process to determine if it was compromised. The process has numerous safeguards to prevent it from being compromised, and past experience suggests that it is very unlikely to be compromised for BOND.

As discussed in Chapter Six, any differences in baseline characteristics that emerge by chance will be neutralized in the impact analysis by including baseline characteristics as control variables in the impact model. Baseline control variables will be used in the analysis even if their means are not statistically different, to improve the precision of the impact estimates (see Chapter Six for more details).

Counseling Services

As described in Chapter One, and in more detail in the *Design Report,* BOND will deliver two types of counseling services to Stage 2 volunteers—WIC and EWIC—via local organizations under contract for this purpose. The process study's examination of counseling will focus primarily on the services delivered to the two Stage 2 treatment groups, as the critical difference between the treatments for these groups is that T21 is offered WIC services and T22 is offered EWIC services. The process evaluation will:

- Assess the fidelity of the WIC and EWIC services delivered to their respective normative models.

- Assess the extent to which T22 subjects received broader, more intensive counseling services than the T21 subjects.

These assessments address related, but distinct issues. To illustrate the difference, note that one possible outcome is that the delivered EWIC services deviates substantially from the normative model, but are nevertheless much broader in scope and more intensive than WIC services.

Specially trained counselors at WIPA organizations—the same organizations that deliver counseling to all beneficiaries—will deliver basic WIC services to the T1 and T21 groups. The type of organization varies; most commonly they are disability service organizations, Centers for Independent Living, or SVRA. The normative model for WIC services is that they are to be the same as those offered to other SSDI beneficiaries (including control subjects) except that the counselors are expected to correctly advise treatment subjects on how the benefit offset affects their benefits if they work. WIPA services normally include counseling on how work might affect benefits, and information and referral to local employment service resources for job placement, work supports, and work accommodations. Services are typically provided by telephone or in person. Resources are generally limited, which restricts the types and intensity of services. Benefits counselors primarily handle information requests, but provide some individualized service planning as needed.

By design, the EWIC services offered to the T22 subjects are more individualized and more intensive than WIC services. EWIC counselors are to take a much more proactive approach than WIC counselors. Specifically, their responsibilities include:

- Calling all EWIC treatment group members and engaging them in the counseling process;

- Identifying vocational strengths on which to build a thorough vocational assessment;

- Systematically exploring barriers to employment and recommending ways to address them;

- Helping beneficiaries decide upon an employment goal and assisting them in taking steps to reach it by developing an Employment Service Plan (ESP);

- Teaching pre-employment skills, such as resume building and interviewing, to those who have identified acquisition of these skills in their ESP;

- Referring beneficiaries to job placement service providers in the community who will place beneficiaries in positions that match goals identified on their ESP; and

- Providing follow-up services to ensure that beneficiaries receive assistance from the providers to which they are referred.

As a result, the expectation is that EWIC counselors will spend much more time than WIC counselors with their typical client, and remain engaged with the client over a much longer period. The EWIC counselors will be able to spend more time on each case, because most often they will have ongoing contact and serve fewer cases than WIC counselors. The counseling budget anticipates that a WIC counselor will provide less than 15 hours of services per case, whereas an EWIC counselor will provide an average of 88 hours of service per EWIC case over five years. [56]

In the BOND Benefit Counseling Specifications and Costs Report (O'Day and Vandergoot, 2010), the BOND implementation team defined a standard set of criteria and benchmarks that will be used to differentiate between WIC and EWIC services across the sites. In addition, the team defined qualitative and quantitative indicators that will be used to monitor the implementation of these services during ongoing site visits. These definitions and indicators, which create standardized expectations for sites, reflect the normative model for the implementation of Stage 2 treatment group services.

Crossover treatment—subjects in T1 or T21 receiving EWIC services and those in T22 receiving WIC services—is a potentially serious problem. The Implementation Team will train the counselors and their managers on the critical importance of avoiding crossover treatment and will look for evidence of crossover via their monitoring activities—analysis of BODS counseling data and site visits. The process evaluation will collect additional information about crossovers during its site visits, will interview implementation staff about their monitoring efforts, will review the monitoring data, and will conduct additional analysis of the BODS data if warranted.

Because the goal of the fidelity assessment is to compare actual implementation to the normative model, the process study team will use the same definitions, indicators, and benchmarks as the implementation team to assess the fidelity of WIC and EWIC services.

Fidelity questions for both WIC and EWIC services include:

- Were services available when beneficiaries sought them?

- Did the counselors deliver accurate and useful information about how earnings affect benefits under the offset?

Additional fidelity questions for WIC services include:

- Were the services delivered comparable to those delivered to control subjects apart from the specific counseling on how earnings affect benefits?

---

[56] The 88 hours includes actual contact hours, routine follow-up calls, completion of paper work, and planning time.

- Did the WIC counselors deliver services that deviated in significant ways from those of the normative model? In particular, did they deliver any of the services that distinguish the normative EWIC model from the WIC model?

Additional fidelity questions for EWIC services include:

- Did the EWIC counselors deliver the additional services expected?

- Did beneficiaries find these services useful?

- How many beneficiaries opted out of follow-up contacts? After how many contacts?

Questions concerning the difference between EWIC and WIC include:

- To what extent did observed differences reflect the differences in normative models? Were there other systematic differences?

- How large were the differences in the percentage of treatment subjects that used counseling, counseling time per beneficiary, the types of services delivered, the frequency of contacts, and duration from the first contact to the last?

As site specific factors are likely to affect the answers to these questions, the analysis will identify any substantial site variation in the answers and attempt to identify reasons for that variation.

The major sources of information for addressing these questions are:

- **In-depth interviews.** Interviews of key informants will determine which agencies provide WIC and EWIC, whether services are provided by permanent staff or on a fee-for-service payment arrangement, what types of services are available, the accessibility and availability of services, how services are provided (for example, telephone, e-mail, in-person), and the frequency of contact between the beneficiary and counselor. Interviews of community partners will seek to determine their perceptions of the WIC and EWIC services within the local site.

- **Descriptive case reviews.** Site visitors will ask counselors to review up to three cases with the interviewer, including the case of the most recent beneficiary served. These descriptive case reviews will help the process analysis to obtain a sense of the counselor's interactions and relationship with the participant. Counselors will describe in detail all of the interactions that they had with the participant, including the number of contacts, nature of contacts, length of service use, barriers to work and services, and key outcomes.

- **Participant focus groups.** Site visitors will conduct separate focus groups with T21 and T22 subjects at each site. These participant focus groups will be the primary source for participant perceptions of the value of the counseling services received.

- **BODS data.** BTS/BODS will provide data to identify the types and quantity of services received (**Exhibit 4-6**). Although the primary purpose of collecting these data is for the operations team to monitor counseling service and support technical assistance, these data will also be quite useful for this component of the evaluation. The quantitative indicators are associated with EWIC

benchmarks, and the team will examine their relationship to measured performance on the quantitative indicators.[57]

4.4.2   Analytic Approach

The evaluation will use standardized fidelity assessment tools based on the questions described above and the indicators described in **Exhibit 4-7**. The team will document each component and will identify deviations between the services observed and the relevant normative model. Site visitors will rate fidelity on scales within the three areas—recruitment and enrollment, implementation of the benefit offset, and provision of EWIC services, and will provide a rationale for their ratings (see **Appendix A**). The process study team leader will compare the site notes to the completed fidelity measure to ensure that the rating matches the implementation description.

---

[57]   Some of the benchmarks were derived by the implementation team to support site monitoring efforts, but others are to be used for evaluation purposes only.

Exhibit 4-7.   Qualitative and Quantitative Indicators Used to Describe and Assess the Fidelity of Counseling Services58

Demonstration Elements	BOND Model		Qualitative Indicators	Quantitative Indicators
	EWIC	WIC		
Outreach and engagement	EWIC counselors will be in contact with beneficiaries by phone or other methods on a monthly basis.	WIPAs conduct only group outreach through, for example, WISE events.	Type of outreach activities (e.g., letters, telephone, e-mail, home visits). Frequency of outreach. Topics discussed during outreach activities. Organizational capacity/ Availability of qualified staff to complete community outreach.	Frequency of contact, type (phone, in-person), length, and issue discussed. Benchmarks: Monthly contact; 88.5 percent of subjects engaged in EWIC services.
Work-focused interviews (1): Barriers and needs assessment	EWIC counselors will administer a psycho-social needs assessment, which contains employment-relevant information on daily living, lifestyle, health, and identifies employment barriers and needs, such as transportation, child care, skill deficits, interviewing.	WIPA assessments focus on benefits and work incentives through the BS&A. Work Incentive Plans (WIPs) describe goals and action steps specifically related to work incentives and referral to other services; no assessment software is used.	Process for completing assessment. Timing of assessment (e.g., when completed and time required to complete). Use of additional assessments tools to identify barriers and service needs. How assessment information is used. Availability of qualified staff to complete assessments.	Was assessment conducted? Data collected or created by the assessment tool. Types of barriers and needs recorded in data. Benchmarks: Needs assessment completed with 90 percent of EWIC subjects that engage in services by the end of the demonstration.
Work-Focused Interviews (2): Skills assessment and transfer of skills (TSA) analysis	EWIC counselors will use two on-line vocational assessment systems— OASYS and Career Scope—to conduct aptitude and skills assessment and TSA, match skills and abilities to occupational requirements, and provide wage data.	WIPA projects refer beneficiaries to SVRA, ENs, or other organizations for employment planning and support.	Process for completing assessment. Timing of assessment (e.g., when completed and time required to complete). Use of additional skills assessments. How assessment information is used. Availability of qualified staff to complete assessments.	Was assessment conducted? If yes, length of time, number of sessions, and results from database uploaded to beneficiary file. Benchmark: Needs assessments will be conducted for 90 percent of T22 subjects that engage in services.

---

58   The implementation team defined the indicators and benchmarks to distinguish between and monitor WIC and EWIC services. To ensure consistency across the implementation and process study teams, the process study team will use these same measures to assess the fidelity of the implementation.

Demonstration Elements	BOND Model		Qualitative Indicators	Quantitative Indicators
	EWIC	WIC		
Developing an Employment Services Plan	EWIC counselors will assist beneficiaries develop vocational goals and tailor services to overcome barriers, meet needs, and reach goals. This is documented in the Employment Support Plan (ESP), which expands the WIP.	WIPs focus on use of work incentive plans and referral to employment support agencies. WIPAs do not deliver direct employment services.	Process for developing employment plan. Use of standardized ESP form. Completeness of subjects' ESPs. Types of activities and goal included in ESP. Process and frequency for updating ESP. Availability of qualified staff to complete ESPs.	The ESP documents the services and outcomes that are planned for each beneficiary. These can form the basis for comparing beneficiary follow up data to the specifications in the ESP. Benchmark: ESPs will be developed for 90 percent of T22 subjects who engage in services.
Service Coordination	The EWIC counselor will provide referrals to the local network of service partners. The EWIC will monitor the services provided by partners to completion.	The WIPA projects refer beneficiaries for employment services. They do not monitor services provided by others.	Staff relationship with participants. Issues addressed/referrals made. Timeliness of referrals. Awareness of community resources (e.g., work supports/accommodations, specialized treatment). Use of current resource guides. Availability of qualified staff to coordinate services.	Follow up monitoring to track completion of service delivery can be captured in BTS. Benchmark: Service coordination is provided for 80 percent of T22 subjects with ESPs.
Referral and coordination with organizations that provide pre-employment skills development	Referrals and coordination with organizations that teach, e.g., interviewing, resume preparation, appropriate dress and comportment, expectations of employers. These will include on-site seminars and sessions that can be hosted by EWICs but will utilize technical experts from other organizations.	WIPA projects refer beneficiaries to SVRA, ENs, or other organizations for pre-employment counseling.	Relationships with local organizations that provide pre-employment skills development (e.g., One-Stop Career Centers, Vocational Rehabilitation agencies, local employment and training service providers). Types of services provided. Process for matching participants to appropriate providers. Process for following up on referrals made. Availability and accessibility of services.	Length of time, number of sessions, what was done (e.g., resume-building, interviewing skills). Benchmark: Pre-employment skills development is provided by partner organizations for 90 percent of T22 subjects with need, documented in ESPs.

Demonstration Elements	BOND Model		Qualitative Indicators	Quantitative Indicators
	EWIC	WIC		
Partnering with organizations that provide employer development	EWIC counselors will partner with organizations that provide employers with information on the potential to hire beneficiaries. EWIC will follow up with beneficiary to ensure they are linked with organizations that conduct employer development activities.	WIPA projects refer beneficiaries to other providers and employer development is conducted by partners.	Relationships with local organizations that provide job development. Types of services provided. Process for matching participants to appropriate providers. Process for following up on referrals made. Availability and accessibility of services.	Referral contacts Benchmark: EWIC counselors will create referrals and coordination that result in partnerships with organizations that conduct employer development.
Referrals and coordination with organizations that provide job placement	Referrals and coordination with organizations that provide outreach with employers to identify opportunities; connect beneficiary with potential employers, accompany individual to job interview (as needed). EWIC will follow up with beneficiary to ensure services are being provided by appropriate organizations.	WIPA projects refer beneficiaries to SVRA, ENs, or other organizations for job placement.	Relationships with local organizations that provide job placement. Types of services provided. Process for matching participants to appropriate providers. Process for following up on referrals made. Availability and accessibility of services.	Length of time, number of sessions, referral agency, what was done (e.g., contact with employer, refer beneficiary to employer). Benchmark: 60 percent of T22 subjects who engage in EWIC services will have earnings at some time during the project; 30 percent of T22 subjects who engage in EWIC will earn above SGA in at least one year during the project.
Referrals and coordination with organizations that provide job retention	EWIC counselors will continue to support the beneficiary and employer in achieving post-placement success. EWIC will follow up with beneficiary to ensure services are being provided by appropriate organizations.	WIPA projects provide no follow along support post-placement.	Relationships with local organizations that provide job placement. Types of services provided. Process for matching participants to appropriate providers. Process for following up on referrals made. Availability and accessibility of services.	Activities provided can be captured in BODS. Benchmark: 20 percent of T22 subjects will retain employment for 12 months or more.

4.5   Timeline for the Process Study Reports

Findings from the BOND process study will be shared with SSA throughout the demonstration project. In addition to individual site progress summaries, process study findings will appear in eight BOND evaluation reports including four rounds of interim reports, an early assessment report and policy brief, and two synthesis reports—the final process study report and final report on participation, impacts, and benefits and costs (see **Exhibit 4-8**). For each of these reports, the qualitative process study data will be combined with statistics based on data from BODS, SSA administrative data, and baseline and follow up surveys. Chapter Nine describes each of the Stage 1, Stage 2, synthesis, and special topics reports. Below is a description of how process study data will be incorporated into these reports.

- **Process study site reports:** After each round of site visits, the process study team will compile brief summary reports for each site that describe the basic implementation of BOND. The reports will be used to monitor the progress of each of the sites and to prepare for the next round of visits. All summaries will be submitted to SSA within two weeks of the last site visit for that round.

- **Stage 1 interim participation, process, and impact reports:** The BOND demonstration includes two rounds of Participation, Process, and Impact Reports for Stage 1 demonstration activities. Process study data from round 6 and 7 visits will be used for the first and second reports, respectively. The first report will be submitted to SSA in December 2015. The second report will be delivered two years later, in December 2017.

- **Stage 2 interim participation, process, and impact reports:** The BOND evaluation team will deliver a second series of interim synthesis reports. The first of these reports will be submitted in March 2014 and will include process study findings from round 5 site visits. The second report, submitted to in June 2016, will incorporate findings from round 7 site visits.

- **Stage 2 early assessment report and policy brief:** The early assessment report, completed March 2013, will include findings from round 3 process study site visits. These findings will also be used to generate a policy brief based on the early assessment report.

- **Final process study synthesis report:** In June 2014, the process study team will submit a comprehensive report from Stage 1 and Stage 2 summarizing the implementation findings across the first five rounds of site visits. This report will provide a detailed look at the context of the demonstration and early findings on the fidelity of implementation to the BOND model.

- **Final synthesis report on participation, impacts, and benefits and costs.** In the final report for this project, the evaluation team will pull from process study findings across the seven rounds of visits. The report will include the full assessment of fidelity of BOND to its design. The findings will be used to help interpret impact study findings and provide recommendations for how SSA might revise the BOND model to improve program outcomes under national implementation.

Exhibit 4-8　　Gant Chart for the Process Evaluation

	Year								
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Implementation Milestones									
Operate local BOND site offices			▬▬▬▬						
Pilot solicitation and random assignment (Stage 2)			▬						
Stage 1 random assignment			▬						
Stage 1 outreach			▬						
Stage 2 main solicitation			▬▬▬						
Stage 2 random assignment			▬▬▬						
Offset, WIC, and EWIC in place			▬▬▬▬▬▬▬▬▬▬▬						
Data Collection									
Site Visits			▪ ▪	▪	▪ ▪	▪	▪		
Stage 2 Baseline Survey			▬▬▬						
Stage 2 12 Month Survey				▬▬▬					
Stage 2 36 Month Survey						▬▬▬			
Stage 1 36 Month Survey						▬			
Administrative Data*			▬▬▬▬▬▬▬▬▬						
Reports									
Process study site reports			▪ ▪		▪ ▪	▪	▪		
Stage 1									
Interim participation, process, and impact reports (2)							▪		
Stage 2									
Early assessment report					▪				
Policy brief					▪				
Interim participation, process, and impact reports (2)						▪		▪	
Synthesis Reports									
Final process study report						▪			
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**

*Administrative data used for the process study includes TRF and BODS

Chapter Five.   Participation Analysis

The participation analysis will document the engagement of prospective BOND subjects in work activity from before entry into the demonstration through the end of the demonstration. It is expected that the use of BOND demonstration services by both treatment groups, including their interest in volunteering to participate in these services in Stage 2, will vary across beneficiary subgroups (e.g., younger versus older workers). The participation analysis will summarize patterns of participation by subgroups and, more broadly examine whether the BOND interventions influenced all types of work activity.

The first component of the participation analysis will focus on the recruitment of volunteers for Stage 2. In Stage 1, recruitment is automatic in that subjects are assigned to the T1, C1, or Stage 2 solicitation pool directly from administrative records. In Stage 2, however, subjects targeted for recruitment must volunteer if they are to participate in the demonstration. Hence, Stage 2 recruitment provides an important opportunity to examine beneficiary interest prior to the delivery of intervention services. This information is important in understanding the characteristics of treatment and control subjects recruited in Stage 2 and, more broadly, the characteristics of beneficiaries who could be potentially targeted in future SSA demonstrations for return-to-work interventions based on their interest in BOND. This recruitment analysis will address the following questions:

1. To what extent do subjects targeted for recruitment for Stage 2 volunteer?

2. What characteristics distinguish volunteers from non-volunteers?

The second component of the participation analysis will include a summary of beneficiary engagement in work and use of demonstration services in both stages. The findings will provide information on the engagement of prospective BOND subjects in work activities and, for the treatment group, use of demonstration services, across both stages. The analysis for the second component will address the following questions:

3. To what extent do subjects in each treatment group work or use employment services and benefits counseling?

4. Who works, uses counseling services and other work incentives, and eventually uses the offset?

5. How did the demonstration affect the use of work-incentive counseling and the services delivered by counselors?

6. What characteristics distinguish offset users from others?

7. How do work and use of work incentives vary across demonstration groups?

8. How do work and use of work incentives change with time?

Information on the eight research questions will be updated for various reports throughout the demonstration as the data become available (see Chapter Nine for details). The findings are expected to inform interpretation of the impact analysis, support policymaker and administrator decisions concerning

the design and implementation of a national program, and provide basic knowledge about beneficiary behavior.

5.1   Data Sources

To address the eight participation questions, the BOND team will draw on SSA administrative program and earnings, survey, and BODS data (**Exhibit 5-1**). For all questions, beneficiary characteristics, such as demographics, diagnoses, and impairment status, are available from the SSA program files. Supplemental information on other characteristics, such as education, will be drawn from the Stage 1 36-month follow-up survey and Stage 2 baseline survey.[59] The main information on Stage 2 volunteers (Questions 1 and 2) will be based on BODS data and the Stage 2 baseline survey. These data will be supplemented with SSA program and earnings data to examine the characteristics that differentiate volunteers from non-volunteers. The main source of information on work activities and use of demonstration services (Questions 3 through 8) will be BODS data. SSA program administrative files, SSA earnings files, and survey data will also be used to address various aspects of work activities, including annual earnings (MEF), impact of earnings on benefits (TRF), and short-term work activities (surveys).

Exhibit 5-1.   Data Sources for Participation Measures and Beneficiary Characteristics

Research Questions	SSA Administrative Program Files (Ticket Research File)	SSA Earnings (Master Earnings File)	Surveys[a]	BODS
Stage 2 Volunteers				
To what extent do subjects recruited for Stage 2 volunteer? (Participation Question 1)			X	X
Which characteristics distinguish volunteers from non-volunteers? (Participation Question 2)	X	X	X	X
Work and Use of Demonstration Services				
To what extent do subjects in each treatment group work or use employment services and benefits counseling? (Participation Question 3)	X	X		X
Who works, uses counseling services and other work incentives, and eventually uses the offset? (Participation Question 4)	X			X
How did the demonstration affect the use of work-incentive counseling and the services delivered by counselors? (Participation Question 5)				X
What characteristics distinguish users from others? (Participation Question 6)	X	X	X	X
How does work and use of work incentives vary across program groups? (Participation Question 7)	X			X
How does work and use of work incentives change with time? (Participation Question 8)	X			X

[a] Includes the Stage 1 36-month survey and Stage 2 baseline survey.

---

[59]   As noted in Chapter Three, the Stage 1 36-month survey and Stage 2 baseline survey are the only surveys that include demographic and other characteristics of BOND subjects.

5.2   Methods

The analysis will use both descriptive and multivariate methods to characterize the participation patterns of prospective BOND subjects. Descriptive comparisons will provide key participation statistics for each of the groups and subgroups defined below. Multivariate methods will be used to analyze the relationships between individual characteristics and key participation outcomes. The BOND team will use: (a) logistic regressions for binary participation outcomes (e.g., any use of services, high versus low intensity of service use); (b) ordered logit for ordered multinomial variables, such as volunteer status (volunteered, almost volunteered, somewhat interested, disinterested); and (c) duration (hazard) models for time from BOND entry to various events, such as the receipt of counseling services, entering employment, completing TWP, and using the offset over several periods. These types of analyses will provide a more in-depth look at whether the variables from the descriptive analysis are significant predictors of participation while holding multiple other factors constant. As in other chapters, statistical tests will be used to assess whether differences in statistics across groups or coefficients in multivariate models differ significantly from zero. Unless otherwise indicated, the analysis will use two-tailed tests with alpha = 0.05.

The analysis sample will include all eligible subjects during each specific time period. The number of eligible subjects will change throughout the demonstration because people die or (for Stage 2) withdraw from the demonstration (e.g., voluntary withdrawal). Analyses of administrative data for all subjects in any group will be weighted to reflect the oversampling of short-duration subjects (if any). Analyses that use data from the surveys will necessarily be limited to those interviewed, weighted to reflect survey non-response. Analyses using Stage 1 36-month survey data will be weighted to reflect the sampling methodology for that survey (see Chapter Three). The BOND team will track the size of the eligible BOND population and assess whether attrition substantially affects BOND outcomes.

5.3   BOND Recruitment (Stage 2 Volunteers only)

The analysis for Stage 2 volunteers will include a summary of characteristics on volunteers and several subgroups of non-volunteers. For non-volunteers, the survey team will be able to track where they drop out of the recruitment process, though no detailed survey data will be gathered on this group. The implication is that we can use the survey tracking information to create subgroups of non-volunteers, but the amount of information on non-volunteers is constrained to administrative records.

The specific subgroups for the volunteer analysis include:

1. *Disinterested*—those who demonstrate no interest in volunteering during the Stage 2 outreach and recruitment process;

2. *Somewhat interested*—those who demonstrate at least some interest (e.g., seek information from the demonstration) but choose to not attend an intake session;

3. *Almost volunteered*—those who attend an intake session, but ultimately decline to volunteer; and

4. *Volunteers*—those who attend an intake session and volunteer.

The first three groups, which represent the sample of non-volunteers, will be used as a comparison to the fourth group of volunteers. The comparison of volunteers to non-volunteers (including the three subgroups of non-volunteers) provides information on how the BOND volunteers differ in characteristics from other beneficiaries in the site. Further, this strategy of identifying subgroups of non-volunteers provides detailed information on the recruiting process, especially the timing of when people became disinterested in participating in services. Such information could be useful early on in the demonstration to refine recruitment and at the end of the demonstration to better understand the differences in interest level across BOND subjects in the Stage 2 solicitation pool.

5.3.1   To What Extent Do Subjects Targeted for Recruitment for Stage 2 Volunteer?

To address this research question, the participation analysis will include descriptive statistics from BODS and the Stage 2 survey to examine the volunteer rate. The rate will be calculated as the number of volunteers divided by the number of Stage 2 solicitation pool subjects recruited. Additionally, the BOND team will examine the distribution of the three non-volunteer groups (disinterested, somewhat interested, and almost volunteered). This analysis will provide information on the interest level of non-volunteers and, specifically, whether most were on the verge of volunteering. For example, the "almost volunteered" subgroup provides information on beneficiaries who were just at the margin of participation and would have possibly participated with greater outreach. On the other hand, the disinterested non-volunteers represent a subgroup unlikely to have participated even with greater outreach.

5.3.2   Which Characteristics Distinguish Volunteers from Non-Volunteers?

To address this research question, the participation analysis will include a summary of how the four subgroups (volunteers, disinterested, somewhat interested, and interested non-volunteers) differ in characteristics. This four-way classification will deliver a rich characterization of the process of volunteering and the beneficiary characteristics that are correlated with volunteering (**Exhibit 5-2**).

Exhibit 5-2.   Characteristics of Stage 2 Volunteers and Non-Volunteers

Characteristics at Solicitation	Volunteers	Non-Volunteers			
		Total	Almost Volunteered	Somewhat Interested	Disinterested
Sample Size (N)					
N					
Sex					
Male Female					
Age in Years					
< 25 25 – 29 30 – 34 35 – 39 40 – 49 50 – 64					

Characteristics at Solicitation	Volunteers	Non-Volunteers			
		Total	Almost Volunteered	Somewhat Interested	Disinterested
Years on Disability Rolls					
0 – 1 year 2 – 3 years 4 – 5 years 6 – 7 years 8 – 9 years 10+ years					
Race / Ethnicity					
Asian/Pacific Islander Black (not Hispanic) Hispanic Native American/Alaskan White Other Missing					
Primary Impairment and Blind Status					
Psychiatric disorders[a] Neoplasms Diseases of circulatory system Musculoskeletal system and connective tissue Nervous system and sense organs Other[b]					
Benefit Amount					
$0 $1 – $500 $501 – $750 $751 – $1,000 $1,001 - $1,250 $1,251 - $1,500 $1,501 - $2,000 > $2,000 Missing					
Completed TWP					
Completed prior to 2007 Completed in 2007 Completed in 2008 Completed in 2009 Completed in 2010 Never Completed					

Characteristics at Solicitation	Volunteers	Non-Volunteers			
		Total	Almost Volunteered	Somewhat Interested	Disinterested
Average Earnings Prior to SSDI entry					
I year prior to SSDI entitlement					
2 years prior to SSDI entitlement					
3 years prior to SSDI entitlement					
TTW Enrollment					
Yes					
No					
VR Enrollment					
Yes					
No					
Medicaid Buy-in Enrollment					
Yes					
No					
County Population Density Among BOND Sites					
First quartile					
Second quartile					
Third quartile					
Fourth quartile					
BOND Site					
Northern New England					
Western New York					
Greater Detroit					
Wisconsin					
Alabama					
South Florida					
Greater Houston					
DC Metro					
Colorado, Wyoming					
Southeast California					

Source: Stage 2 baseline survey data (on volunteers), TRF, and MEF.

a   *Psychiatric disorders* include affective, schizophrenic, and anxiety disorders (the term excludes mental retardation, which is categorized as "other").

b   *Other* includes the following impairments: congenital anomalies; endocrine, nutritional, and metabolic diseases; injuries; mental retardation; diseases of the blood and blood-forming organs, digestive system, genitourinary system, respiratory system, skin and subcutaneous tissue, HIV/AIDS; and other diagnoses.

5.4   Work and Use of Demonstration Services

For the second component of the participation analysis, in order to address the six research questions regarding work and use of demonstration services, the BOND team will use a conceptual framework that tracks how prospective BOND subjects move along a work path and, for treatment subjects, their use of the offset (**Exhibit 5-3**). Major markers on that path under current law appear in the top half of **Exhibit 5-**

3 and those under the BOND benefit offset appear in the bottom half of the exhibit. Beneficiaries may avail themselves of counseling services or obtain employment services under Ticket to Work (TTW) at any point along the path. The top half of the boxes in **Exhibit 5-3** will be used to compare the work path of treatment and control subjects, while the bottom half of the boxes will be used to examine how treatment subjects use BOND services.

Exhibit 5-3.   Beneficiary Work Path

1. Inactive (Not Working or Using Employment Services)	→	2. Employed and/or Using Employment Services	→	3. TWP Completed	→	4. Earnings Above SGA Following TWP
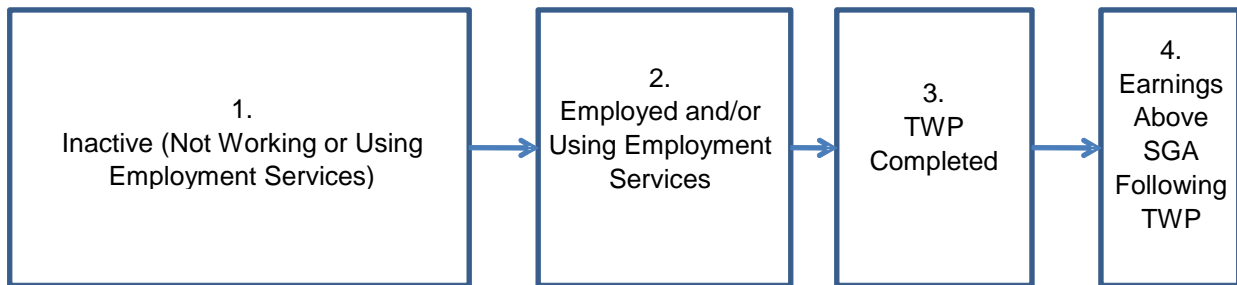
BOND Treatment Subject Path to Becoming Offset Users

Inactive Subjects (Box 1)	→	Potential Offset Users (Boxes 2 and 3)	→	Offset User (Box 4)
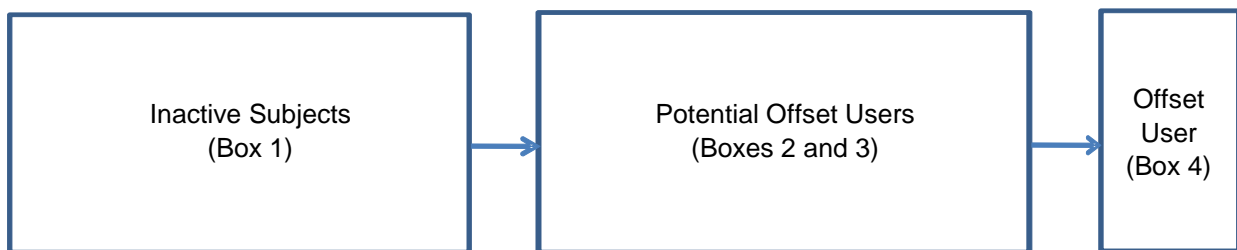
At the time of enrollment into the demonstration, prospective BOND subjects may be anywhere along the current-law path after award and before the termination of benefits, which will have direct implications for their use of BOND services. The first group (Box 1) includes subjects who are not engaged in any work activities or support programs. The next two groups include subjects who are working and using employment services (Box 2) and/or have completed the TWP (Box 3), but are not yet at the point of using the offset. The final group (Box 4) includes subjects who have completed the TWP and are earning above SGA.

Treatment subjects along the work path can be classified into the following three primary groups for the participation analysis:

- **Inactive** subjects are those treatment subjects (T1, T21, T22) who have not engaged in any employment or employment related activities (e.g., TTW) since initial award. Presumably, these subjects are farthest away from using the offset given their work history since SSDI entry (Box 1 of the work path).

- **Potential users** are treatment subjects (T1, T21, T22) who did not receive BOND payments, but have engaged in activities that can lead to the use of the offset in the future (Boxes 2 and 3 in the work path).

- **Users** are treatment subjects (T1, T21, T22) who have completed their TWP and received BOND payments for earning above the SGA (Box 4 in the work path).

5.4.1   To what extent do subjects in each treatment group work or use employment services and benefits counseling?

To address this research question, the participation analysis will include a summary of the size of the inactive, potential user, and user subgroups based on available BODS data. The BOND team will produce separate estimates for treatment subjects in Stages 1 and 2. It is likely that the size of these subgroups will differ between Stages 1 and 2 due to differences across stages in the target population and services (**Exhibit 5-4**). The Stage 2 potential offset user and user groups will likely be relatively larger than the corresponding groups from Stage 1 because the sample for Stage 2 includes only volunteers, and volunteers are more likely to be working at the start of the demonstration relative to those assigned to T1. Additionally, the type of work incentive counseling (WIC) the treatment subjects use also differs by group. As noted in Chapter Three, the T1 and T21 subjects will receive information on BOND work incentive counseling, referred to here as *BOND-WIC*, from the WIPA provider. This counseling is similar to that provided to the control group by the WIPA, except that WIPA providers will provide information on the BOND work incentives. The T22 subjects are expected to receive enhanced counseling services, EWIC (see Chapter Three).

The BOND team will track how the size of these groups changes over the course of the demonstration by computing work participation and employment service use rates at specific points in time relative to enrollment in the demonstration (e.g., at six months after random assignment, one year after random assignment, etc.).[60] We know from past research that beneficiaries who return to work and use the SSDI work incentives usually do so during their first few years on the rolls (Liu and Stapleton 2010). In the first year, very few beneficiaries work and use the work incentives. By the fifth full year after award, however, 23 percent worked in at least one year and 14 percent were employed during the year. Liu and Stapleton (2010) also found that over 7 percent completed the TWP by the end of the fifth year, and almost 5 percent had their benefits suspended for at least one month because of earnings above SGA. Less change is anticipated for long-duration beneficiaries. Although some of these beneficiaries will have been on the rolls for only four or five years, most of those who are assigned at Stage 1 will have been on the rolls for a much longer period. The longitudinal research shows that most beneficiaries who return to work and use the work incentives do so within their first five years on the rolls. It is certainly possible that the offset will stimulate new work activity for those in the long-duration group, but the expectation is that most users of the offset in this group will be dominated by those who are already working when they enter BOND. Results might be quite different for Stage 2 volunteers, however, because those not already engaged in work activity are much less likely to volunteer.

The BOND team will produce estimates for **Exhibit 5-4** for each participation analysis report. Each completed exhibit will provide information on the current use of services, the potential use of service in future months (based on their position in the work path), and, more broadly, how many treatment subjects are on a work path. Separate statistics will be produced for short- and long-duration subjects, as well as totals weighted to reflect the differing sample weights for these short- and long-duration subjects.

---

[60]   Please refer to the timeline for the participation analysis (**Exhibit 5-10**) discussed in Section 5.5 for details.

Exhibit 5-4.   **BOND Users and Potential Users in Stage 1 and Stage 2**
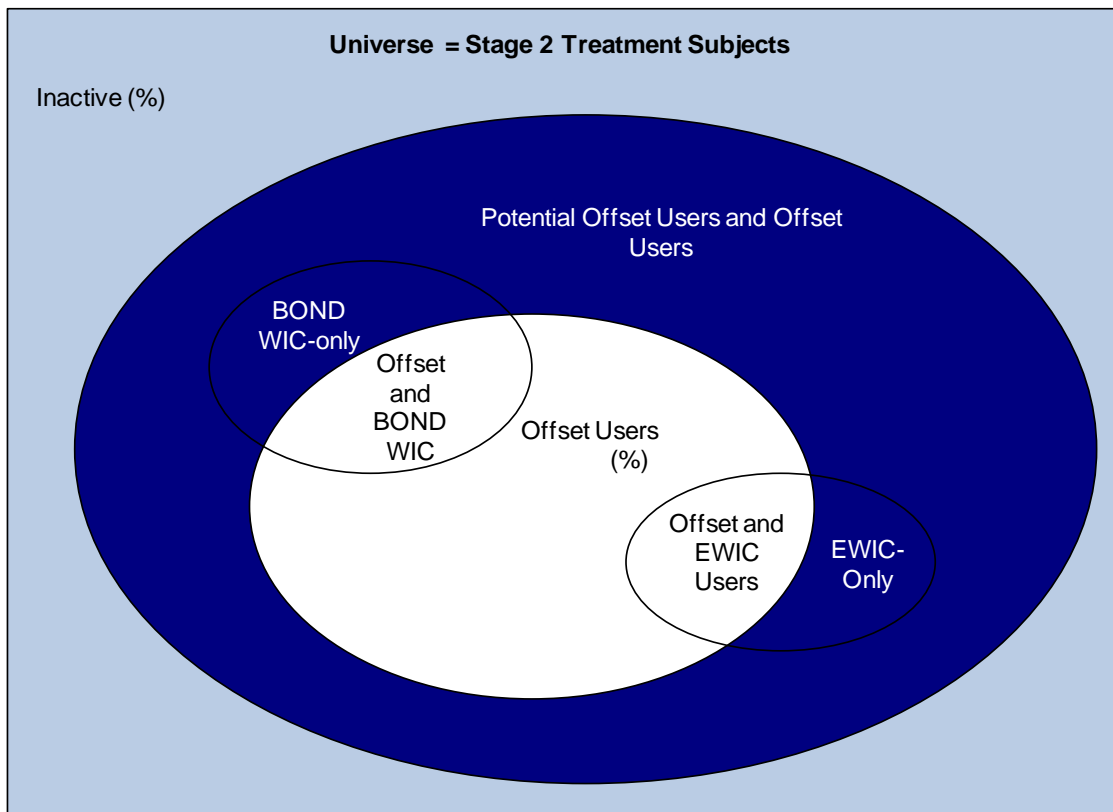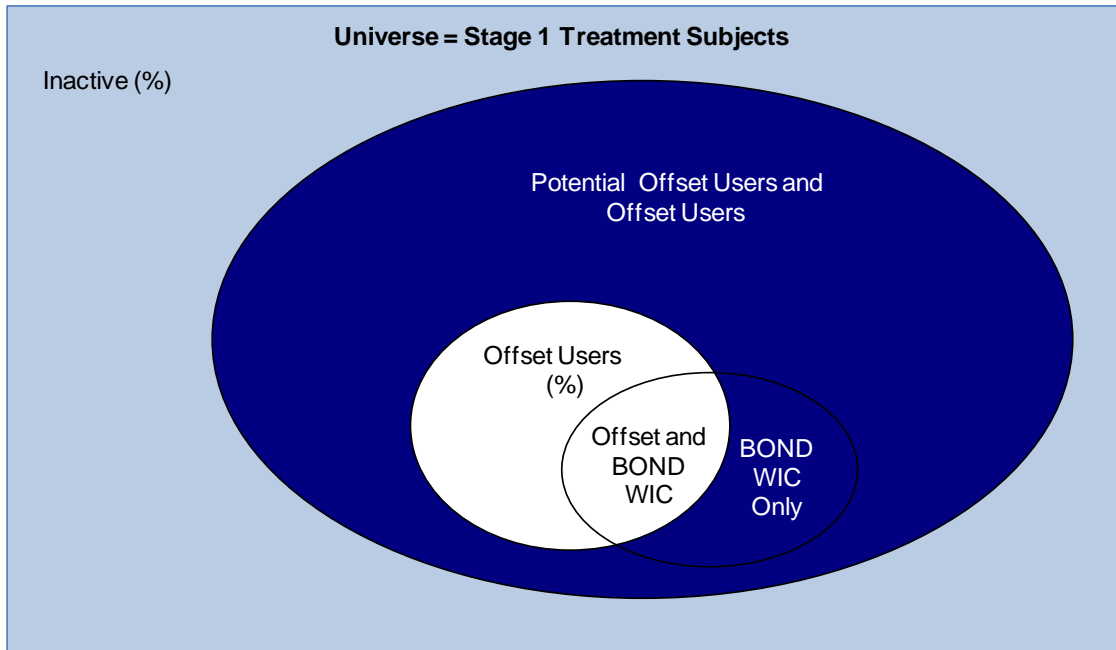
Source: TRF and MEF.

5.4.2   Who Works, Uses Counseling Services and Other Work Incentives, and Eventually Uses the Offset?

To address this research question, the participation analysis will include a descriptive summary of the current work activities of subjects within inactive, potential user, and user groups (**Exhibit 5-5**). This analysis will provide information on where subjects are along that work path and, hence, their potential use of the offset. It will also provide information on the work and service use characteristics of participants in each group. This information will be useful for assessing whether subjects with certain work or service use characteristics, or living in certain areas, are more likely to be on the work path as a potential or actual offset user relative to other subjects.

This descriptive summary of work and work incentive use by those within each treatment group will build on the analysis in **Exhibit 5-5** to provide a more in-depth look at where treatment subjects are relative to use of BOND services. The potential offset users group includes subgroups of treatment subjects who are at various stages along the work path. Those who have completed their TWP, especially current workers, are presumably closest to becoming offset users in the future ("high potential users"). Those who have not completed the TWP, especially those who are not currently working, presumably have lower potential for becoming users in the short-term. The offset user group includes the actual users of the offset since random assignment. The current user group provides an estimate of short-term BOND service use. The combination of current and past user groups provides a long-term view of treatment subjects who have ever used BOND services since random assignment. The past user group is important to track because these treatment subjects might return to offset use. The work activity statistics for the Stage 2 Offset-Only and Offset-EWIC treatment groups will be compared directly to determine whether these two groups are using the offset, or progressing toward offset use, at the same or different rates.

5.4.3   How did the demonstration affect the use of work-incentive counseling and the services delivered by counselors?

To address this question, the participation analysis will include a descriptive summary of work-incentive counseling services used by each control and treatment group (**Exhibit 5-6**). This analysis will provide information on how the use of counseling services differs by treatment status in each demonstration stage. The analysis will produce statistics on: the percentage in each group that receive any service from a work-incentive counselor; mean service duration; the number and types of contacts made; findings from beneficiary assessments; and recommendations made by counselors. In addition, the analysis will include a summary of use of the additional services that the EWIC counselors are to provide (T22 subjects only).

Exhibit 5-5.   Work Activity Composition of Treatment Groups (T1, T21, and T22)

Characteristics	Total (weighted)
Inactive	
Not working or using supports	
Potential Users	
Not completed TWP	
Currently working	
Using employment services	
Using WIC	
Earnings above TWP income	
Not currently working	
Using employment services	
Using WIC	
Completed TWP, not earning above SGA	
Currently working	
Using employment services	
Using WIC	
Not currently working	
Using employment services	
Using WIC	
EWIC-only (T22-only)	
Using EWIC, no benefit offset	
Users	
Current User	
Using employment services	
Using WIC	
Past User	
Exited from SSDI (reasons other than work)	
Currently working below SGA	
Using employment services	
Using WIC	
Not currently working	
Using employment services	
Using WIC	
Offset and EWIC Users (T22-only)	
Using EWIC and benefit offset	

Source: TRF and BODS.

Note: This table will be produced for each treatment group (T1, T21, and T22). Standard errors for each statistic will appear in parentheses below each statistic.

Exhibit 5-6.   **Work-incentive Counseling Services Received By Treatment/Control Status and Stage**

Measure of WIC Use	Stage 1			Stage 2				
	C1	T1	Difference between T1 and C1	C2	T21	T22	Difference between T21 and C2	Difference between T22 and C2
Type of Contact								
Any WIC contact								
Initial Follow-up								
Outreach Services • Provided problem-solving and advocacy services • Provided work incentive analysis services • Provided long-term support services								
Duration of service provision (hours)								
WIC services terminated								
Beneficiary Assessment Findings								
Using SSA work incentives								
Employed								
Using training services								
Outcome of WIC contact								
For working beneficiaries, recommended: • Increase hours worked • Reduce hours worked • Stop working								
For non-working beneficiaries, recommended: • Job search • Job acceptance (among offers)								
All beneficiaries • Prepared new or updated work incentives plan • Recommended follow-up contact								
EWIC Services (T22-only)								
Contact Details Percent with any Contact Number of contacts Hours	N/A	N/A	N/A	N/A	N/A		N/A	

	Stage 1			Stage 2				
Measure of WIC Use	**C1**	**T1**	**Difference between T1 and C1**	**C2**	**T21**	**T22**	**Difference between T21 and C2**	**Difference between T22 and C2**
Additional EWIC Beneficiary Assessments Percent with following barrier domains identified under EWIC barriers and needs assessment Health Employment Financial Other[a] Percent with EWIC vocational assessment	N/A	N/A	N/A	N/A	N/A		N/A	
Job Development and Referrals Percent with following services planned as part of ESP development: Education Pre-employment skills training Unpaid work Paid work Other related work support[b] Service referral Pre-employment skills development Employer partnership development Referred to job placement organization Job placement follow-up Job retention follow-up	N/A	N/A	N/A	N/A	N/A		N/A	

Source: BODS data.

Notes: All subjects will receive a common core of WIC services that are being recorded in BODS. N/A= not applicable.

[a]   Other barrier domains include social, family, personal capacity, and other.

[b]   Other related work support includes job coaching, accommodation, job retention/post placement support, transportation, and other.

5.4.4   What Characteristics Distinguish Users from Others?

To address this research question, the participation analysis will include a summary of the demographic and program characteristics of inactive, potential user, and user subjects (**Exhibit 5-7**).[61] It is expected

---

[61]   For Stage 2, the BOND team will also examine how participation varies with additional beneficiary characteristics from the available baseline survey (see Chapter Three). The additional characteristics include health, functional limitations, household income and composition, access to transportation, and receipt of benefits from other public and private programs.

that the characteristics of these groups will vary substantially based on previous findings. For example, Livermore (2009) and Mamun et al. (2010) found that younger beneficiaries, those who receive SSDI-only, and beneficiaries from select states (especially mid-western states) were more likely to be working relative to other beneficiaries. Tracking whether differences exist in the age, title, gender, primary impairment condition, and site characteristics of treatment subgroups provides SSA information on which subjects are most likely to become BOND users and could provide insights on whether impact findings could vary by these subgroups.

Exhibit 5-7.   Characteristics of Treatment Subgroups at BOND Entry for Treatment Groups (T1, T21, and T22)

Characteristics at BOND Entry	Inactive	Potential Users	Users	Use Rate
Sample Size (N)				
Title				
SSDI only				
Concurrent (T21 and T22 only)				
Gender				
Male				
Female				
Age in Years				
< 25				
25 – 29				
30 – 34				
35 – 39				
40 – 49				
50 – 64				
Years on Disability Rolls				
0 – 1 year				
2 – 3 years				
4 – 5 years				
6 – 7 years				
8 – 9 years				
10+ years				
Race / Ethnicity				
Asian/Pacific Islander				
Black (not Hispanic)				
Hispanic				
Native American/Alaskan				
White				
Other				
Missing				
Primary Impairment and Blind Status				
Psychiatric disorders[a]				
Neoplasms				
Diseases of circulatory system				
Musculoskeletal system and connective tissue				
Nervous system and sense organs				
Other[b]				

Characteristics at BOND Entry	Inactive	Potential Users	Users	Use Rate
Benefit Amount				
$0 $1 – $500 $501 – $750 $751 – $1,000 $1,001 - $1,250 $1,251 - $1,500 $1,501 - $2,000 > $2,000 Missing				
Completed TWP				
Completed TWP Prior to 2007 Completed in 2007 Completed in 2008 Completed in 2009 Completed in 2010 Never Completed				
Average Earnings Prior to SSDI entry				
I year prior to SSDI entitlement 2 years prior to SSDI entitlement 3 years prior to SSDI entitlement				
TTW Enrollment				
Yes No				
Medicaid Buy-in Enrollment				
Yes No				
BOND Site				
Northern New England Western New York Greater Detroit Wisconsin Alabama South Florida Greater Houston DC Metro Colorado, Wyoming Southeast California				

Source: TRF and MEF.

Note: Impairment groups are those expected to contain at least 5 percent of T1 subjects, and will be modified as appropriate given actual impairment distributions. All categories are mutually exclusive. This table will be produced separately for each treatment (T1, T21, and T22) group. Information from the Stage 1 and 2 follow-up surveys will include socioeconomic (e.g., education), program (e.g., use of VR services), and income information that can be added to the table when the survey data become available for later reports. Estimates will be weighted to reflect different sampling weights for short and long duration groups. Standard errors for each statistic will appear in parentheses below each statistic.

[a]   *Psychiatric disorders* include affective, schizophrenic, and anxiety disorders (the term excludes mental retardation, which is categorized as "other").

[b]   *Other* includes the following impairments: congenital anomalies; endocrine, nutritional, and metabolic diseases; injuries; mental retardation; diseases of the blood and blood-forming organs, digestive system, genitourinary system, respiratory system, skin and subcutaneous tissue, HIV/AIDS; and other diagnoses.

5.4.5   How Does Work and Use of Work Incentives Vary Across Program Groups?

To address this research question, the participation analysis will include a comparison of work activity characteristics across the control and treatment groups. While control subjects will never be users of BOND services, as noted in **Exhibit 5-3**, they can be compared to treatment subjects along different stages of the work path. Each treatment group will be compared to the relevant control group on work engagement measures that are comparable for the two groups (**Exhibit 5-8**).

Exhibit 5-8.   Comparison of Work Paths for BOND Treatment and Control Groups: Treatment Groups (T1, T21, and T22) Versus Control Groups (C1 and C2)

Characteristics	Treatment	Control	Difference
Inactive			
Not working or using supports			
Not Completed TWP			
Currently working			
Using employment services			
Using counseling			
Earnings above TWP income			
Not currently working			
Using employment services			
Using counseling			
Completed TWP, Not Engaged in SGA			
Currently working			
Using employment services			
Using counseling			
Not currently working			
Using employment services			
Using counseling			
Engaged in SGA after TWP Completion			
Currently engaged in SGA			
Using employment services			
Using counseling			
Past Offset User			
Exited from SSDI (reasons other than work)			
Currently working below SGA			
Using employment services			
Using counseling			
Not currently working			
Using employment services			
Using counseling			

Source: TRF, MEF, and BODS.

Note: This table will be produced separately for each treatment-control pair, weighted to reflect different sampling weights for short- and long-duration groups. Information from the Stage 1 and 2 follow-up surveys will include demographic, (e.g., education), program (e.g., use of VR services), and income information that can be added to this table when these data become available in later reports. Standard errors for each statistic will appear in parentheses below each statistic.

5.4.6   How Does Work and Use of Work Incentives Change with Time?

To address this research question, the participation analysis will include a tabulation of cumulative use of BOND services, as well as current use of the offset (**Exhibit 5-9**). Based on the employment patterns of current SSDI beneficiaries, it is expected that offset use for treatment subjects will increase markedly over time. Parallel charts will be produced for counseling, service enrollment, employment, and TWP completion.[62]

Exhibit 5-9.   Cumulative and Current Offset Use Rates
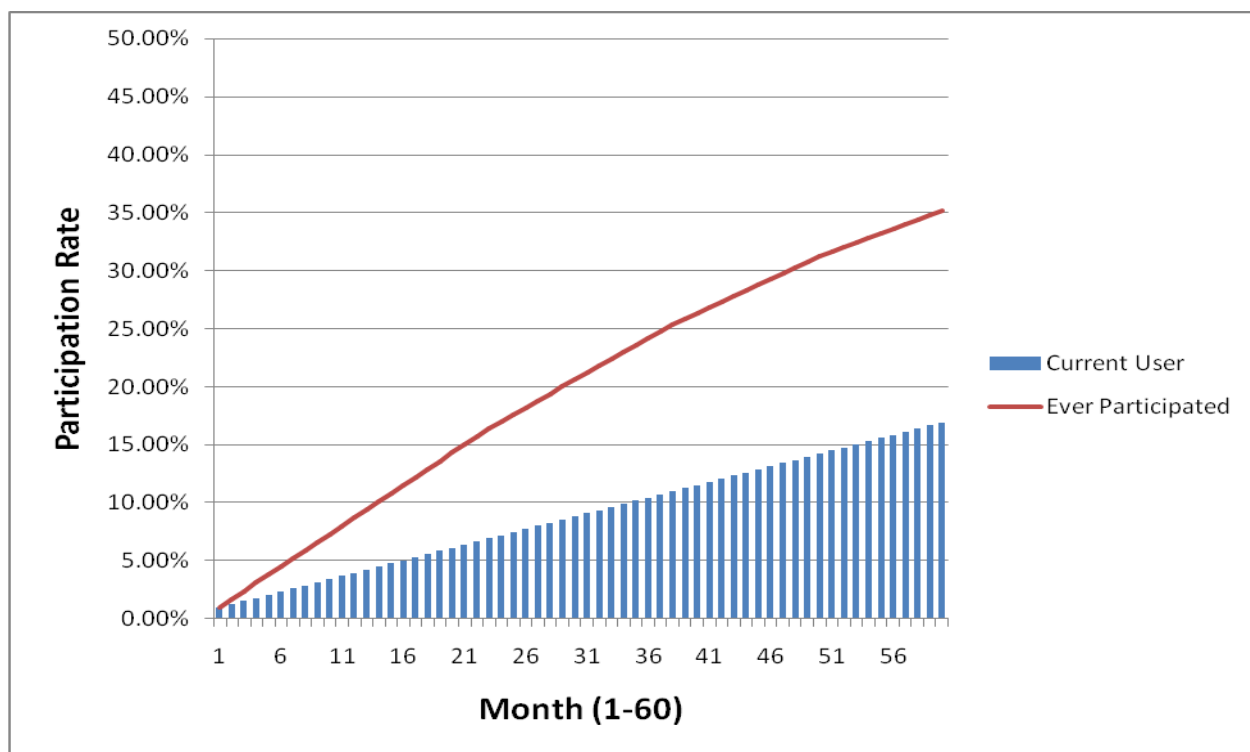
Source: TRF.

5.5   Timeline for the Participation Analysis Reports

The participation analysis findings will be summarized in a series of reports to SSA throughout the project (**Exhibit 5-10**):

- Stage 1 Interim participation, process, and impact reports: The participation analyses in the interim reports will provide a snapshot of interim participation activities of all Stage 1 BOND subjects. The first report, to be submitted in December 2015, will summarize participation outcomes approximately three years after random assignment. The second report, to be completed

---

[62]   As noted above, for cumulative service use over a specific time period (e.g., months 1 – 60 after random assignment), the analysis sample will be restricted to those who are alive and still participating in the demonstration at the end of the time period. Similarly, for current service use, the analysis sample for each time period will only include beneficiaries who are alive and still in the demonstration.

by December 2017, will provide an updated snapshot of participation activities at the end of the project, approximately five years after random assignment.

- Stage 2 Interim participation, process, and impact reports: Like the Stage 1 analyses, the participation analyses in the Stage 2 interim reports will provide snapshots of interim participation activities of all Stage 2 BOND subjects, as well as an analysis of volunteering for Stage 2 of the demonstration. Because random assignment for Stage 2 will continue until September 2012, the first Stage 2 interim report, to be submitted in March 2014, will only address the participation questions related to volunteering. The second report, to be completed by June 2016, will be an update of the fuller set of research questions, through the third year after Stage 2 random assignment.

- Synthesis reports: The final report will incorporate findings from the participation analysis using information from both Stage 1 and Stage 2 of the demonstration.[63] Specifically, it will summarize findings from the Stage 1 participation analysis and the first interim report from Stage 2. It will also update the participation findings in the Stage 2 second interim report.

---

[63] The participation findings in the final synthesis report (October 2017) will overlap with those in the second Stage 1 interim report (due in December 2017). The only difference between the reports is that the second Stage 1 interim report will provide a comprehensive summary of all questions in Exhibit 5-1, whereas the final synthesis report will draw only on participation findings that are necessary in describing cross-cutting issues (see Chapter Eight for more details).

Exhibit 5-10.   Timeline for the Participation Analysis

	Year								
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Implementation Milestones									
Operate local BOND site offices			▬▬▬▬▬						
Pilot solicitation and random assignment (Stage 2)			▬						
Stage 1 random assignment			▬						
Stage 1 outreach			▬						
Stage 2 main solicitation			▬▬▬▬						
Stage 2 random assignment			▬▬▬▬						
Offset, WIC, and EWIC in place			▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬						
Data Collection for Participation Analysis									
Stage 2 Baseline Survey			▬▬▬▬						
Stage 1 36 Month Survey						▬			
Administrative Data*			▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬						
Reports									
Stage 1									
Interim participation, process, and impact reports (2)								▪	
Stage 2									
Interim participation, process, and impact reports (2)						▪		▪	
Synthesis Reports									
Final report on participation, impacts, and benefits and costs									▪
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**

Chapter Six.   Net Impact Analysis

The "net impact" of a policy or program is the amount by which events turn out differently with the policy/program in place than they would have without the policy/program. Thus, the BOND impact analysis asks: Do beneficiaries' lives turn out differently with the benefit offset and/or enhanced work incentive counseling (EWIC) in place, and if so in what ways and by what amount? Answering this question connects several elements of the evaluation. It reveals how the intervention documented in the process study, when combined with the beneficiary decisions chronicled in the participation study, change the end result for the target population BOND seeks to affect. Net impact findings subsequently feed into the benefit-cost analysis of the social gains produced by the intervention—an assessment in which the consequences of BOND for SSDI beneficiaries loom large.

The current chapter describes the analytic methods we plan to use to measure BOND's net impact on beneficiaries for a range of outcomes. It begins by stipulating the impact hypotheses the evaluation will test and the comparisons across the different random assignment groups that will provide the basis for these tests. It then describes the data sources for the analysis and presents table shells that show how net impact results will be reported in future BOND impact reports and annual letter reports. The bulk of the chapter describes the analytic approach to the impact analysis that ensures the internal validity, external validity, and statistical precision of the findings. Later sections discuss the minimum detectable effects that the evaluation is designed to detect, the software needed to compute impact findings, and the schedule for impact reporting.

6.1   Impact Hypotheses and Comparisons

The BOND net impact analysis will address four sets of hypotheses, defined by the following broad questions:

A.   What is the *impact of the benefit offset on outcomes for the full SSDI caseload*, compared to current law benefit payment rules?

B.   What is the *incremental effect of the benefit offset when added to administrative changes on outcomes for the SSDI beneficiaries who are most likely to use it*—SSDI-only beneficiaries who volunteer for BOND?

C.   What is the *incremental effect of the combination of the benefit offset and enhanced work incentives counseling* when added to administrative changes on outcomes for the SSDI beneficiaries who are most likely to use them—SSDI-only beneficiaries who volunteer for BOND?

D.   What is *the incremental effect of enhanced work incentives counseling when added to the benefit offset*, on outcomes for the SSDI beneficiaries most likely to use these provisions—SSDI-only beneficiaries who volunteer for BOND?

In each of these domains, a large number of specific hypotheses will be tested.[64] In domain A, specific hypotheses will take the form

> H_A: The benefit offset, compared to current law, increases/decreases *[beneficiary outcome]* for the SSDI caseload as a whole.

In the other three domains, specific hypothesis concerning various beneficiary outcomes have the form

> H_B: The benefit offset, compared to current law, increases/decreases the *[beneficiary outcome]* of SSDI-only beneficiaries who volunteer for BOND,

> H_C: The benefit offset plus enhanced work incentives counseling, compared to current law, increases/decreases the *[beneficiary outcome]* of SSDI-only beneficiaries who volunteer for BOND, and

> H_D: The addition of enhanced work incentives counseling to the benefit offset increases/decreases the *[beneficiary outcome]* of SSDI-only beneficiaries who volunteer for BOND.

The specific beneficiary outcomes to be considered in each domain are listed in **Exhibit 6-1**. The exhibit indicates whether an impact in a specific direction is expected (+, -, 0) based on the theoretical discussion in Chapter Two or whether the direction of impact is ambiguous (?).

Exhibit 6-1. **Hypothesized Effects of BOND Components on Different Beneficiary Outcomes**

+ / - / ? / 0 indicates hypothesized direction of impact

	Impact on . . .			
	Full Caseload	**SSDI-Only Volunteers**		
Outcome for Which Impact Is Hypothesized	**Impact of Offset (H_A)**	**Impact of Offset (H_B)**	**Impact of Offset + EWIC (H_C)**	**Impact of EWIC given Offset (H_D)**
Employment-Related Outcomes				
Percent Employed	+	+	+	?
Mean Annual Earnings	?	?	?	?
Percent with Annual Earnings Above BYA	+	+	+	?
Percent with Annual Earnings Above 2 X BYA	?	?	?	?
Percent with Annual Earnings Above 3 X BYA	?	?	?	?
TWP Entry	+	+	+	?
TWP Completion	+	+	+	?
TWP Months Used	+	+	+	?
Use of Grace Period	+	+	+	?
Use of IRWE	?	?	?	?

---

[64] The statistical implications of testing a large number of hypotheses (what is called in the evaluation literature the "multiple comparisons problem"), are discussed later in the chapter.

| | Impact on . . . | | | |
| | Full Caseload | SSDI-Only Volunteers | | |
Outcome for Which Impact Is Hypothesized	Impact of Offset (H$_A$)	Impact of Offset (H$_B$)	Impact of Offset + EWIC (H$_C$)	Impact of EWIC given Offset (H$_D$)
Amount of IRWE	?	?	?	?
In Self-employed job	?	?	?	?

Any Fringe benefits? (9 types)
    Health care insurance
    Dental benefits
    Sick days with pay
    Disability benefits
    Workers' compensation
    Paid vacation
    Free or low-cost childcare
    Transportation assistance
    Pension or retirement benefits
	?	?	?	?

Self-paid work-related expenses
    Commuting-related expenses
    Licenses, tools, and uniforms
    Child Care
    Special equipment expenses
    Personal assistance services
	?	?	?	?

Hours per week working in a paid job	?	?	?	?
Hourly wage rate	?	?	?	?
Weeks per year working	?	?	?	?
Months worked since RA	?	?	?	?
Personal goals: - getting a job - moving up in a job or learning a new job	+ ?	+ ?	+ ?	+ ?
Receipt of Earned Income Tax Credit	?	?	?	?
Benefits				
SSDI Benefits	?	?	?	?
SSDI Receipt	+	+	+	?
Number of SSDI Overpayments	-	-	-	-
Mean Size of SSDI Overpayments	-	-	-	-
SSI Benefits	-	-	-	?
SSI Receipt	-	-	-	?
Medicaid Benefits	?	?	?	?
Medicaid Enrollment	?	?	?	?
Medicare Benefits	?	?	?	?
Medicare Enrollment	0	0	0	0
SNAP Benefits	-	-	-	?

| | Impact on . . . | | | |
| | Full Caseload | SSDI-Only Volunteers | | |
Outcome for Which Impact Is Hypothesized	Impact of Offset (H_A)	Impact of Offset (H_B)	Impact of Offset + EWIC (H_C)	Impact of EWIC given Offset (H_D)
SNAP Receipt	-	-	-	?
Public Assistance/Welfare (TANF) Benefits	-	-	-	?
Workers' Compensation Benefits	-	-	-	?
Private Disability Insurance Benefits	-	-	-	?
Unemployment (UI) Benefits	-	-	-	?
Training-Related Outcomes				
Number of TTW Tickets Assigned	+	+	+	+
Amount of TTW Ticket Payments	+	+	+	+
Use of Vocational Rehabilitation service	+	+	+	+
Use of Benefit Counseling Services	+	+	+	+
Highest grade or year of school	?	?	?	?
Any Job-related schooling or training since RA	+	+	+	+
Total weeks of job-related schooling or training	+	+	+	+
Use of employment supports (list kinds) since RA: Work or job assessment Help to find job Training to learn new job or skill Advice about modifying job or workplace On-the-job training, coaching or support services Personal care assistance Transportation assistance Help in keeping a job Any kind of assistive device Other	?	?	?	?
Currently full-time student	?	?	?	?
Currently part-time student	?	?	?	?
Health and Functioning Outcomes (Quality of Life)				
Health status (global)	?	?	?	?
Mortality Rate	?	?	?	?
Physical Health and Functioning Health limits respondent in moderate activities Accomplished less as a result of physical health (past 4 weeks) Limited in kind of work or regular daily activities as a result of physical health (past 4 weeks)	?	?	?	?

Outcome for Which Impact Is Hypothesized	Impact on . . .			
	Full Caseload	SSDI-Only Volunteers		
	Impact of Offset (H_A)	Impact of Offset (H_B)	Impact of Offset + EWIC (H_C)	Impact of EWIC given Offset (H_D)
Emotional Health and Functioning (past 4 weeks) Accomplished less as a result of emotional problems Did not to work or activities as carefully as usual as a result of emotional problems Pain interfered with normal work (including both work outside the home and housework)	?	?	?	?
Emotional Well-being in past 4 weeks (Composite of calm and peaceful, lot of energy, downhearted and depressed)	?	?	?	?
Nights stayed in hospital in past 12 months	?	?	?	?
Days that illness or injury kept respondent in bed more than half the day in past 12 months	?	?	?	?
Material Hardship Outcomes (Quality of Life)				
Household Income	+	+	+	0
Percent with Household Income Below Poverty Line	-	-	-	0
Any time in past 12 months when respondent did not meet all essential expenses.	-	-	-	0
Any time in past 12 months when: Did not pay full amount of rent or mortgage Was evicted for not paying rent or mortgage Could not pay full amount of utility bills Had utility turn off service because of nonpayment Had telephone or cell company disconnect because of nonpayment	-	-	-	0
In past 12 months: Ever not eating enough because could not afford enough food Ever not eat for a whole day because not enough money for food	-	-	-	0
Number of people in household	?	?	?	?

As shown in the exhibit and explained in Chapter Two, for mean earnings and mean benefit levels the direction of the impact of the offset is ambiguous. However, theory predicts that the offset will have a positive impact on employment and other employment-related outcomes. As EWIC services are expected to assist beneficiaries in taking advantage of the offset, the addition of EWIC services to the offset (H_D) is expected to have an effect in the same direction as the impact of the offset in many instances—but is

ambiguous in some instances where the offset effect is signed. Movement towards employment is also expected to generate positive impacts on training-related outcomes. Moreover, the offset will allow some treatment subjects who would not engage in SGA for a sustained period under current law to do so under the offset, which could either improve or be deleterious to their physical and mental health and functioning. Finally, although mean earnings may not increase, movement into employment should increase income at the low end of distribution, reducing material hardship.

The random assignment design of the BOND demonstration strongly equips it to test these impact hypotheses as part of the evaluation. Impacts will be measured by contrasting the mean outcomes[65] of the different random assignment groups described in Chapter One and shown here in **Exhibit 6-2**.

Exhibit 6-2.   Comparisons for the Impact Evaluation
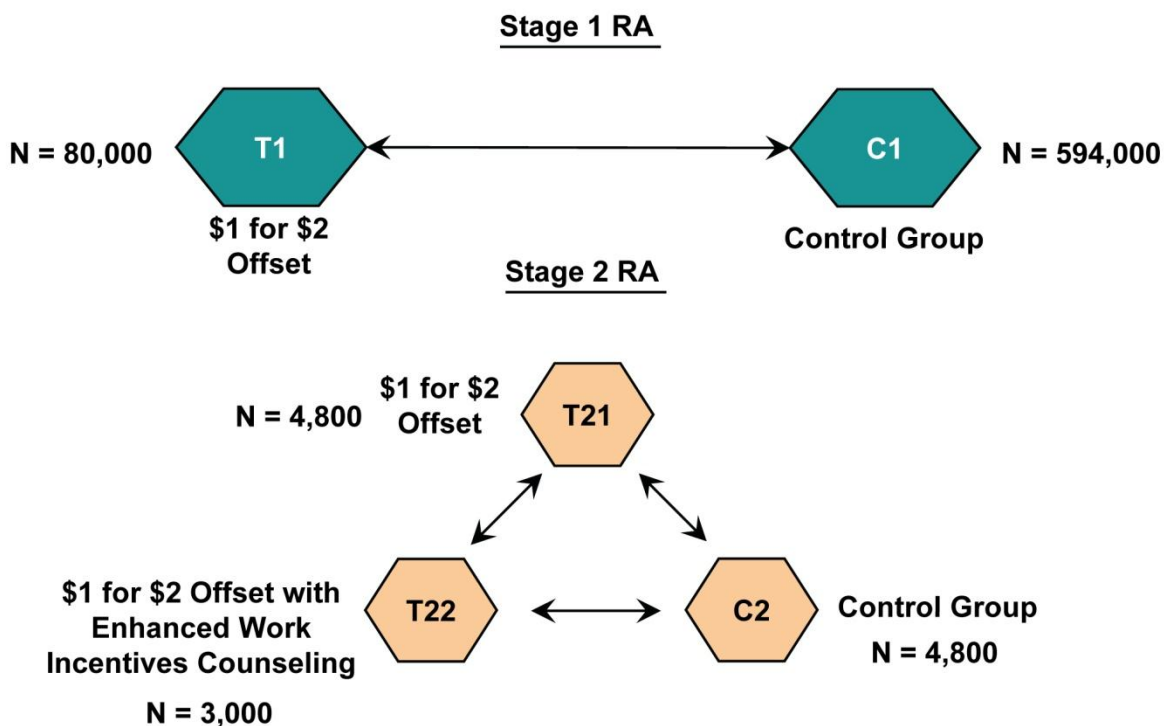
Because of random assignment, any statistically significant difference in mean outcomes between treatment and control groups constitutes evidence of an intervention impact. The four impact domains correspond to the "comparison arrows" in the exhibit as follows:

Research Question/Hypotheses		Addressed by Comparison of
A.	What is the *impact of the benefit offset on the full SSDI caseload*, compared to current law benefit payment rules?	T1 to C1
B.	What is the *impact of the benefit offset on SSDI-only beneficiaries who volunteer for BOND*, compared to current law?	T21 to C2
C.	What is the *impact of the benefit offset plus enhanced work incentives counseling* on SSDI-only beneficiaries who volunteer for BOND, compared to current law?	T22 to C2
D.	What is the *incremental effect of enhanced work incentives counseling when added to the benefit offset*, for SSDI-only beneficiaries who volunteer for BOND?	T22 to T21

The first impact comparison takes place at Stage 1, contrasting treatment group (T1) subjects offered the opportunity to use the $1 for $2 benefit offset with control group (C1) subjects who continue under current law. This comparison will provide estimates of impacts when the offset is offered to all SSDI beneficiaries, apart from the very youngest and very oldest.[66]

The Stage 2 groups include the offset-only group (T21), the offset-EWIC group (T22) and the Stage 2 control group (C2) of SSDI-only volunteers. For this population, pair wise comparisons of outcomes for beneficiaries in these groups will 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 already available to both groups (T22 vs. T21).

---

[66]   The C1 control group contains an over-representation of concurrent beneficiaries and longer-duration beneficiaries, since all BOND-eligible individuals not otherwise sampled will be placed in it. C1 observations will be weighted in the analysis to align with the T1 treatment group on these factors (concurrent versus non-concurrent, short-duration versus longer-duration beneficiaries) when estimating impacts, thereby ensuring the unbiasedness of the impact estimates derived from the T1-to-C1 comparison. A subsample of the C1 group, the "C1 Core" sample, will also be used in Stage 1 impact estimation. This subsample was selected ahead of the remainder of C1 sample and excludes the "residual" cases noted above. It exactly mirrors the T1 group in size (80,000) and composition (in terms of its concurrent/non-concurrent distribution and short/longer duration ratio). While we will report findings from the T1-versus-*all*-of-C1 comparison as the primary Stage 1 impact results—since they provide the greatest statistical precision—we will also verify these findings by recomputing all Stage 1 estimates using the C1 "core" sample in place of the full C1 sample. The value of this exercise arises from the heightened transparency and conceptual symmetry of the T1-versus-C1-core comparison; because it is also unbiased, the estimates it produces should closely parallel those of the T1-versus-*all*-of-C1 comparison.

6.2   Data Sources and Impact Table Shells

This section (i) summarizes the evaluation's outcome data sources and (ii) illustrates how impact findings will be presented in evaluation reports in tables indicating data sources.

6.2.1   Summary of Data Sources

As discussed in Chapter Three, the net impact evaluation will draw on the following data sources:

- Administrative data from SSA and other agencies, including the Centers for Medicare & Medicaid Services (CMS) and the Rehabilitation Services Administration (RSA);

- Stage 1 and Stage 2 surveys; and

- BOND Operations Data System (BODS) data, which includes data from random assignment, outreach, recruitment, intake, earnings data collection, and data exchange between BOND operational components and SSA.

The use of these sources to obtain the outcome measures in **Exhibit 6-1** above is indicated in **Appendix B.1**. Specific examples appear in the table shells below.

6.2.2   Presentation of findings on earnings and employment

A full set of table shells for the impact analysis appears in **Appendix B.2**. To illustrate, **Exhibits 6-3** and **6-4** provide table shells for Stage 1 and Stage 2 impacts on earnings and employment.   As seen in these exhibits, SSA administrative records will allow for an examination of how impacts evolve over time. The three Stage 2 comparisons (T21 vs. C2, T22 vs. C2, and T22 vs. T21) will be shown together in the same table in order to minimize the total number of tables.

Exhibit 6-3.   Stage 1 Impacts of BOND on Earnings and Employment: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Total Earnings			
Total Earnings in RA Year and 4 Years Following	$nnn	$nnn	$nnn (nnn)
Time Path of Earnings			
Earnings in Year before RA Year	$nnn	$nnn	$nnn (nnn)
Earnings in RA Year	$nnn	$nnn	$nnn (nnn)
Earnings in First Year after RA Year	$nnn	$nnn	$nnn (nnn)
Earnings in Second Year after RA Year	$nnn	$nnn	$nnn (nnn)
Earnings in Third Year after RA Year	$nnn	$nnn	$nnn (nnn)
Earnings in Fourth Year after RA Year	$nnn	$nnn	$nnn (nnn)
Employment			
Any Employment in RA Year and 4 Years Following	0.nn	0.nn	0.nn (0.nn)
Number of Years With Any Employment in RA Year and 4 Years Following	n.nn	n.nn	n.nn (n.nn)
Time Path of Employment			
Any Employment in Year before RA Year	0.nn	0.nn	0.nn (0.nn)
Any Employment in RA Year	0.nn	0.nn	0.nn (0.nn)
Any Employment in First Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Any Employment in Second Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Any Employment in Third Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Any Employment in Fourth Year after RA Year	0.nn	0.nn	0.nn (0.nn)

Source: Social Security Administrative Earnings records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

**Exhibit 6-4.   Stage 2 Impacts of BOND on Earnings and Employment:
T21 Versus C2, T22 Versus C2, T22 Versus T21**

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Total Earnings						
Total Earnings in RA Year and 3 Years Following	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Time Path of Earnings						
Earnings in Year before RA Year	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in RA Year	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in First Year after RA Year	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in Second Year after RA Year	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in Third Year after RA Year	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Employment						
Any Employment in RA Year and 3 Years Following	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Number of Years With Any Employment in RA Year and 3 Years Following	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Time Path of Employment						
Any Employment in Year before RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in First Year after RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in Second Year after RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in Third Year after RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: Social Security Administrative Earnings records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

6.2.3   Presentation of findings on SSDI Benefits

Exhibits 6-5 and **Exhibit 6-6** show sample table shells for Stage 1 and Stage 2 impacts on SSDI benefits and receipt.

Exhibit 6-5.   Stage 1 Impacts of BOND on SSDI Benefits and Receipt: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Total SSDI Benefits			
Total SSDI Benefits in Years 1-6 after RA	$nnn	$nnn	$nnn (nnn)
Time Path of SSDI Benefits			
SSDI Benefits in Year 1 after RA	$nnn	$nnn	$nnn (nnn)
SSDI Benefits in Year 2 after RA	$nnn	$nnn	$nnn (nnn)
SSDI Benefits in Year 3 after RA	$nnn	$nnn	$nnn (nnn)
SSDI Benefits in Year 4 after RA	$nnn	$nnn	$nnn (nnn)
SSDI Benefits in Year 5 after RA	$nnn	$nnn	$nnn (nnn)
SSDI Benefits in Year 6 after RA	$nnn	$nnn	$nnn (nnn)
SSDI Receipt			
Number of Years With Any SSDI Receipt in Years 1-6 after RA	n.nn	n.nn	n.nn (n.nn)
Time Path of SSDI Receipt			
Any SSDI Receipt in Year 1 after RA	0.nn	0.nn	0.nn (0.nn)
Any SSDI Receipt in Year 2 after RA	0.nn	0.nn	0.nn (0.nn)
Any SSDI Receipt in Year 3 after RA	0.nn	0.nn	0.nn (0.nn)
Any SSDI Receipt in Year 4 after RA	0.nn	0.nn	0.nn (0.nn)
Any SSDI Receipt in Year 5 after RA	0.nn	0.nn	0.nn (0.nn)
Any SSDI Receipt in Year 6 after RA	0.nn	0.nn	0.nn (0.nn)

Source: Social Security Administrative TRF records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

6.2.4   Presentation of findings on other outcomes

Table shells for impacts on other employment-related outcomes, other benefits, training-related outcomes, health and functioning, and material hardship are shown in **Appendix B.2**, for all the outcome measures in **Exhibit 6-1** above.

Exhibit 6-6.   Stage 2 Impacts of BOND on SSDI Benefits and Receipt: T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Total SSDI Benefits						
Total SSDI Benefits in Years 1-5 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Time Path of SSDI Benefits						
SSDI Benefits in Year 1 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
SSDI Benefits in Year 2 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
SSDI Benefits in Year 3 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
SSDI Benefits in Year 4 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
SSDI Benefits in Year 5 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
SSDI Receipt						
Number of Years With Any SSDI Receipt in Years 1-5 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Time Path of SSDI Receipt						
Any SSDI Receipt in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any SSDI Receipt in Year 2 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any SSDI Receipt in Year 3 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any SSDI Receipt in Year 4 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any SSDI Receipt in Year 5 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: Social Security Administrative TRF records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

6.3   Estimation Methods

As described above, the net impact analysis will contain four types of comparisons. For Stage 1, outcomes for the T1 group will be compared to outcomes for the C1 group. For Stage 2, outcomes for the T21 group and the T22 group will each separately be compared to the C2 group, and will also be compared to each other. As the BOND demonstration is designed to produce national impact estimates, all impact analyses will be performed using pooled data from the 10 sites.

This section of the chapter discusses several aspects of the methods that will be used to produce nationally representative net impact estimates. The first subsection presents the impact estimation model, the covariates that will be included in this model, and the expected sample sizes for the analyses. The second subsection discusses the analysis weights that will be used to assure national representativeness. The third subsection identifies a limited set of important subgroups for which impact analyses will be performed. The last subsection discusses the issues related to examining multiple comparisons in a single analysis and how this issue will be handled in the BOND impact analysis.

6.3.1   Impact Estimation Model

The impacts presented in the net impact analysis will be estimated using a hierarchical (i.e., multi-level) linear regression model that includes covariates (to increase estimation precision and to adjust for chance differences in baseline characteristics between groups) and analysis weights (to insure national representativeness). Given that the BOND sample is clustered in 10 sites, the hierarchical model properly accounts for variation in impacts across sites and produces the correct standard errors to make externally valid statistical inferences. The model that will be used for estimating Stage 1 impacts on continuous outcomes is as follows:

Stage 1 Model

Level 1 – Individual Beneficiaries

$$y_{ij} \quad = \quad \pi_{0j} + \pi_{1j}T_{1ij} + \sum_m \gamma_m X_{ijm} + \varepsilon_{ij}$$

Level 2 – Sites

$$\pi_{0j} \quad = \quad \beta_{00} + v_{0j} , \ j = 1, 2, ... , 10$$
$$\pi_{1j} \quad = \quad \beta_{10} + v_{1j} , \ j = 1, 2, ... , 10$$

where y_{ij} is an outcome measure for beneficiary i in site j (j = 1,2, …, 10),

   π_{0j} = the site-specific component of the mean outcome of beneficiaries in site j absent
      the T1 treatment,

   π_{1j} = mean impact of the T1 treatment on beneficiary outcomes in site j,

   T_{1ij} = an indicator of whether beneficiary i in site j has been randomized into the T1
      group (= 1 if so, = 0 if in C1 group),

X_{ijm} = a measure of baseline characteristic m for individual i in site j,

β_{00} = the grand mean of outcome y across the 10 sites absent the T1 treatment,

β_{10} = the overall impact of the T1 treatment (versus the no treatment of the C1 group),

γ_m, β_{01}, β_{11} are additional regression coefficients, and

ε_{ij}, v_{0j}, and v_{1j} are error terms where ε_{ij} is independent of v_{0j} and v_{1j}, and ε_{ij} ~

$$N\left(0, \sigma^2\right) \text{ and } \begin{bmatrix} v_{0j} \\ v_{1j} \end{bmatrix} \sim N\left[\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} \tau_{00} & \tau_{01} \\ \tau_{10} & \tau_{11} \end{pmatrix} \right].$$

Hypothesis testing:

<u>Significance of T1 vs. C1 impacts</u>

H$_0$: $\beta_{10} = 0$ vs.   H$_1$: $\beta_{10} \neq 0$

The Stage 2 impact estimation model for continuous outcomes includes a second treatment term, but is otherwise quite similar to the Stage 1 model. For simplicity, the same notation for many terms is used in the model:

Stage 2 Model

Level 1 – Individual Beneficiaries

$$y_{ij} = \pi_{0j} + \pi_{1j}T_{21ij} + \pi_{2j}T_{22ij} + \sum_m \gamma_m X_{ijm} + \varepsilon_{ij}$$

Level 2 – Sites

$$\pi_{0j} = \beta_{00} + v_{0j}, \; j = 1, 2, \ldots, 10$$
$$\pi_{1j} = \beta_{10} + v_{1j}, \; j = 1, 2, \ldots, 10$$
$$\pi_{2j} = \beta_{20} + v_{2j}, \; j = 1, 2, \ldots, 10$$

where terms are as in the Stage 1 model except,

   π_{0j} = the site-specific component of the mean outcome of beneficiaries in site j absent the T21 and the T22 treatments,

   π_{1j} = mean impact of the T21 treatment on beneficiary outcomes in site j,

   π_{2j} = mean impact of the T22 treatment on beneficiary outcomes in site j,

T_{21ij} = an indicator of whether beneficiary i in site j has been randomized into the T21 group (= 1 if so, = 0 if not),

T_{22ij} = an indicator of whether beneficiary i in site j has been randomized into the T22 group (= 1 if so, = 0 if not),

β_{00} = the grand mean of outcome y across the 10 sites absent either the T21 or the T22 treatment,

β_{10} = the overall impact of the T21 treatment (versus the no treatment of the C2 group),

β_{20} = the overall impact of the T22 treatment (versus the no treatment of the C2 group),

ε_{ij}, v_{0j}, v_{1j}, and v_{2j} are error terms where ε_{ij} is independent of v_{0j}, v_{1j}, and v_{2j},

and $\varepsilon_{ij} \sim N(0, \sigma^2)$ and $\begin{bmatrix} v_{0j} \\ v_{1j} \\ v_{2j} \end{bmatrix} \sim N\left[\begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}, \begin{pmatrix} \tau_{00} & \tau_{01} & \tau_{02} \\ \tau_{10} & \tau_{11} & \tau_{12} \\ \tau_{20} & \tau_{21} & \tau_{22} \end{pmatrix} \right]$.

Hypothesis testing:

Significance of T21 vs. C2 impacts

H$_0$: $\beta_{10} = 0$ vs.   H$_1$: $\beta_{10} \neq 0$

Significance of T22 vs. C2 impacts

H$_0$: $\beta_{20} = 0$ vs.   H$_1$: $\beta_{20} \neq 0$

Significance of T22 vs. T21 impacts

H$_0$: $\beta_{20} = \beta_{10}$ vs.   H$_1$: $\beta_{20} \neq \beta_{10}$

The study design of BOND combined with this hierarchical linear model will produce net impact estimates that possess several desirable characteristics. The impact estimates will be *internally valid*, so that the estimates measure without bias the true impact of BOND's interventions in the study sites. The internal validity is due to the study design—random assignment insures that unobserved individual characteristics of beneficiaries are unrelated to which group beneficiaries are assigned. The impact estimates will also be *externally valid*, so that estimates measure without bias what the mean impact of BOND's interventions would be for the nation as a whole were they implemented nationwide.[67] The external validity of the impact estimates is also based on the study design—the fact that the 10 BOND sites were chosen randomly allows them to represent the other areas not chosen—and the use of analysis weights whereby the BOND sites are weighted so that they represent the nation as a whole. Also contributing to the external validity is the manner by which the model calculates standard errors for the

---

[67]   While BOND has a randomly selected nationally representative set of sites, the evaluation cannot measure the impact of a change in the "entire culture" of the SSDI program that would likely accompany a change in rules of the SSDI program to incorporate the offset for all recipients. This is an inherent limitation of all experimental evaluations. This limitation is pointed out in National Research Council (2001).

impact estimates. The heirarchical model separately accounts for within-site variation and between-site variation in outcomes and between-site variation in treatment impacts, producing appropriately-sized confidence intervals around nationally representative impact estimates.[68] Finally, the estimation model *maximizes statistical precision* through the inclusion of individual (X_{ijm}) covariates in the model, increasing the explanatory power of the model. The covariates also serve to adjust for chance imbalances in observed baseline characteristics between assignment groups.

For some outcomes, such as benefit receipt in a particular month, y_{ij} is dichotomous (0/1) rather than continuous. For such outcomes linear regression —even with hierarchical linear modeling —gives inefficient estimates and may predict impossible values of the outcome (i.e., values less than zero or greater than one). For such outcomes, heirarchical logistic regression, a procedure designed to handle dichotomous variables in heirarchical models, will be used.

Covariates

A set of baseline covariates will be included in the regression model for all impacts. The large number of BOND subjects allows for the inclusion of a large number of covariates without concern for reduced degrees of freedom. For Stage 1 impacts, baseline covariates will be limited to those variables available on SSA administrative records (and a single characteristic of the beneficiary's locality—county employment rate[69]). For Stage 2 impacts, the covariate set will include variables both from SSA administrative records and from the Stage 2 Baseline survey. The covariates that will be included in impact analyses are shown in **Exhibit 6-7**.

Exhibit 6-7.   Baseline Covariates Included in Impact Analyses

Covariates (measured at baseline unless otherwise specified)	Stage 1	Stage 2
Site	x	x
Gender	x	x
Age	x	x
Age (squared)	x	x
Age less than age 55	x	x
Number of years receiving SSDI	x	x
Number of years receiving SSDI (squared)	x	x
Short-duration SSDI receipt (36 months or less)	x	x
Number of Trial Work Period months used	x	x
SSI receipt dummy	x	N/A

---

[68] BOND sample sizes within site are quite large, allowing for relatively precise estimates of within-site variation. However, the relatively small number of sites in BOND (10) means that between-site variation of outcomes and impacts can be less precisely estimated. The heirarchical model produces confidence intervals that accurately reflect this less precise knowledge of true between-site variation.

[69] The county employment rate at baseline may have important explanatory power for employment-related outcomes. Due to their large geographical size, most BOND sites will include several areas for which county employment rates are available. The heirarchical model described above treats any variable that has variation within a site as an "individual" (X_{ijm}) characteristic.

Covariates (measured at baseline unless otherwise specified)	Stage 1	Stage 2
Access to Medicaid buy-in program dummy	x	x
Beneficiaries who receive either means tested transfers or PDI		x
Payee is other than self	x	x
Primary impairment categories	x	x
Any employment since start of SSDI receipt	x	x
Earnings in year prior to RA year (SSA records)	x	x
Language other than English (SSA records)	x	x
Rural area dummy	x	x
County employment rate (subsite characteristic)	x	x
Marital status (married, widowed, divorced, separated, never married)		x
Cohabiting dummy		x
Education dummies (LT HS, HS/GED, Some college, 4yr college degree)		x
Child under age 18 in household		x
Race/ethnicity (African American, Hispanic, White, Asian, Other)		x
Working (baseline survey)		x
Lives in non-group residence (single family home, regular apartment, or mobile home)		x
Enrolled in school or taking classes		x
Full-time student		x
Engaged in volunteer work		x
Health dummies (excellent, very good, good, fair, poor)		x
Number of months worked in previous 3 years		x
Square of number of months worked in previous 3 years		x
Personal goals include getting a job (if not working), moving up in a job, or learning new job skills		x
Health limits in moderate activities "a lot"		x
Health limits climbing several flights of stairs "a lot"		x
Emotional well-being (composite scale)		x
Stayed overnight in a hospital in past 12 months		x
Needs the help of another to get around inside home		x
Needs the help of another to get around outside home		x

Sample Sizes

Impacts that are based on administrative data will be estimated with the full Stage 1 and 2 samples. Impacts that are based on follow-up survey data will be estimated with the survey respondent sample to these surveys. The Stage 1 Follow-up Survey interviews will be attempted with a targeted subset of BOND participants; those most likely to work will be oversampled. In contrast, the Stage 2 Interim and Follow-up surveys will be attempted with all Stage 2 participants. Expected sample sizes, given this design and projected response rates for the different surveys, are shown in **Exhibit 6-8**.

Exhibit 6-8.   Expected Sample Sizes for BOND Impact Estimation

Comparison	Impacts Based on Administrative Data	Impacts Based on 12-Month Interim Survey	Impacts Based on 36-Month Follow-up Surveys
Stage 1			
T1 vs. C1	80,000 + 594,000 =674,000	No Stage 1 Interim Survey	5,000* + 5,000* =10,000* (8,000 expected)
Stage 2			
T21 vs. C2	4,800 + 4,800 =9,600	4,800* + 4,800* =9,600* (7,680 expected)	4,800* + 4,800* =9,600* (7,680 expected)
T22 vs. C2	3,000 + 4,800 =7,800	3,000* + 4,800* =7,800* (6,240 expected)	3,000* + 4,800* =7,800* (6,240 expected)
T22 vs. T21	3,000 + 4,800 =7,800	3,000* + 4,800* =7,800* (6,240 expected)	3,000* + 4,800* =7,800* (6,240 expected)

*   These sizes are numbers of attempted interviews. The target response rate for the BOND Interim and Follow-Up Surveys is 80 percent.

The remainder of this section addresses additional aspects of the impact estimation, including the use of analysis weights, the estimation of impacts for subgroups within the BOND sample, and multiple hypothesis adjustments.

6.3.2   Analysis Weights

The BOND evaluation will use analysis weights in the estimation of program impacts to produce estimates for the national population of SSDI beneficiaries. The underlying idea is that because the BOND sample has been randomly chosen with known probabilities from the entire nation, the sample can be weighted using these probabilities during analysis to produce estimates that represent the entire nation.

Separate sets of analysis weights will be constructed for Stage 1 and Stage 2 analyses, and for administrative data outcomes and follow-up survey outcomes. Specifically, the weights will account for:

- the random selection of sites into BOND from eight strata,

- the oversampling of short-duration beneficiaries in Stage 1 and, if needed,[70] in Stage 2,

- the relatively high concentration of concurrent beneficiaries in C1 (because concurrent beneficiaries are ineligible for the Stage 2 Solicitation Pool),

- the oversampling of those "most likely to work" in the Stage 1 Follow-up Survey sample,

- the probability of being assigned to the Stage 2 Solicitation Pool (which differs for short- and long-duration beneficiaries), and

- nonresponse to the Stage 1 and Stage 2 Interim and Follow-up surveys.

---

[70]   The target for the Stage 2 sample is to contain at least 50% short-duration beneficiaries. In order to achieve this compositional target, it may be necessary to have the Stage 2 Solicitation Pool contain short-duration beneficiaries at a higher rate than their naturally occurring rate.

Additional technical details about the construction of the analysis weights are provided in **Appendix B.3**. The weights will be incorporated at two levels of the proposed hierarchical model. Weights for the site level of the model ("Level 2") are inversely proportional to the probability of each site being selected for BOND. A second set of weights, for the individual level of the model ("Level 1"), is inversely proportional to the probability of selecting each individual in site j, conditional on site j being selected for BOND.[71]

Not using weights in the estimation of impacts would produce biased estimates of the impacts for the population, since we did not form the BOND sample through simple random sampling from the universe of SSDI recipients nationally. Using analytic weights in accordance with the complex sampling design of BOND will ensure unbiased estimation of population parameters, including BOND's impact on beneficiary outcomes. However, the uneven sampling probabilities that necessitate the use of analytic weights increase the standard errors of all the impact estimates, compared to what those standard errors would have been had BOND been designed as a simple random sample. This increase in the variance of impact estimates is called a design effect. We have taken account of the design effect in our calculation of minimum detectable effects (MDEs) later in this chapter.

6.3.3   Subgroup Impacts

SSA is particularly interested in learning about BOND's impacts on various subpopulations of the SSDI caseload. To that end, subgroup analyses will be conducted for both the Stage 1 and Stage 2 impact comparisons, for the subpopulations shown in **Exhibit 6-9**.

Exhibit 6-9.   Subgroups to be Included in BOND Subgroup Impact Analysis, by Stage

Stages 1 and 2		
• Short-duration beneficiaries (those receiving benefits 36 months or less when entering BOND)	Vs.	• Longer-duration beneficiaries (those receiving benefits 37 months or more when entering BOND)
• Beneficiaries who are working at baseline	Vs.	• Beneficiaries who are not working at baseline
• Beneficiaries with access to Medicaid buy-in programs	Vs.	• Beneficiaries without access to Medicaid buy-in programs
• Younger beneficiaries (less than age 55)	Vs.	• Older beneficiaries (age 55 and older)
• Beneficiaries in primary impairment groups (psychiatric, musculoskeletal, and possibly others, as sample sizes permit)	Vs.	• Beneficiaries in other primary impairment groups
Stage 1 Only		
• SSDI-only beneficiaries	Vs.	• Concurrent (SSDI and SSI) beneficiaries

---

[71]   The presentation of the analysis weights in **Appendix B.3** multiplies these two weights together. The first term in each of the weight formulas presented there is the weight for site selection and the remaining term the weight for individual selection. In actuality, the two weight components are separately entered for use by the HLM statistical software. For more details, see HLM 6.08 Documentation File "Using design weights."

We now motivate each of these comparisons:

- Short-duration beneficiaries are an important subgroup because they will provide the evaluation with the opportunity to learn how beneficiaries who recently entered the rolls will respond to the benefit offset. The response to BOND of such short-duration beneficiaries might be quite different than the response of those who have been on the rolls for many years (i.e., longer-duration beneficiaries). If so, the long-run impacts of a benefit offset--when all beneficiaries have had the opportunity to use the offset since their first day on the rolls--might be substantially different than the impacts during the first years after implementation.

- Economic theory implies that the work hours and earnings of beneficiaries who are working at baseline might be especially responsive to the change in benefit rules. For example, any beneficiaries who are working but have kept their earnings below the SGA amount to avoid benefit loss will now have the opportunity to increase their earnings with a much smaller reduction in benefits. Also, some of those whose benefits were already suspended due to earnings will move onto the "benefit ramp," where they may choose to reduce their earnings because they can partially recover the loss in earnings through higher SSDI benefits. There are also reasons to think that some beneficiaries who are not working at baseline will be induced to work by the offset; for instance, they might take a job that is attractive except that, under current law, their earnings would be too high to retain their benefits, whereas under BOND they can retain part of their benefits.

- Beneficiaries who have access to a Medicaid buy-in (MBI) program might be more likely to take advantage of the benefit offset than others because the MBI program is designed to provide Medicaid coverage for those who work. This could be especially important for those in the Medicare waiting period or those who need services not covered by Medicare. The expected implementation of the Affordable Care Act might change the value of MBI to working beneficiaries.

- Younger beneficiaries are of considerable interest for two reasons. First, prior research has shown that they are much more likely than older beneficiaries to return to work and even leave cash benefits because of work (Liu and Stapleton, 2010); hence, the impact of BOND for them might be much larger than for others. Second, younger beneficiaries typically remain on the rolls for many more years than those who enter when older, so increases in their earnings because of the benefit offset will potentially be perpetuated for a much longer period than those for older workers.

- To the extent feasible, the evaluation will examine variation in impacts across major primary impairment groups, as determined by SSA at the time of program entry. Beneficiaries with psychiatric impairments and musculoskeletal impairments constitute the two largest groups (28.5 and 27.6 percent, respectively, of all SSDI beneficiaries in December 2009).[72] Both groups have grown substantially as a share of all beneficiaries since the mid 1980s. Hence, it would be interesting to know whether the earnings and benefits of these two groups are more or less sensitive to the introduction of the benefit offset than the earnings and benefits of those with other primary impairments. Other impairment groups might be too small to support meaningful tests;

---

[72]   Statistics in this paragraph are from Table 20 of SSA (2010)

the next largest group is nervous system and sense organ, and contained just 9.4 percent of all beneficiaries in December 2009.

- The distinction between concurrent and SSDI-only applies only to Stage 1, because concurrent beneficiaries are excluded from Stage 2. The distinction is of interest because the interaction between SSI benefits and SSDI benefits under the offset is such that the value of the SSDI offset to a concurrent beneficiary is smaller than is the value of the offset to an SSDI-only beneficiary with a comparable current-law SSDI benefit. This is the reason why concurrent beneficiaries are not included Stage 2. Beneficiaries with other public or private benefits that are contingent on earnings, such as PDI and workers' compensation, might also find the benefit offset to be less attractive than those with no such benefits, other things constant.

To avoid endogenous selection, which would interfere with the internal validity of the subgroup impact estimates, each included subgroup will be defined using only baseline characteristics.[73]

Our analysis of subgroups will proceed as follows. The BOND subgroup analysis will split the sample to separately analyze data for members of Subgroup A and data for members of Subgroup B.[74] The procedures described above in Section 6.3.1 for impact estimation for the entire sample will be applied to the smaller data sets of beneficiaries from particular subpopulations. Tests for significant differences in impact between subgroups will also be presented and discussions of findings will be focused on the hypothesis tests for whether the impacts differ across subgroups. (The implications of large numbers of subgroup comparisons, from a statistical test point of view, are discussed in the next subsection.)

Examples of table shells for presenting subgroup findings are shown in **Appendix B.4**.

6.3.4   Multiple Hypothesis Adjustments

The BOND impact analysis involves running a large number of hypothesis tests due to the inclusion of four impact comparisons (see **Exhibit 6-2** above), the large number of outcome measures to be examined (see **Exhibit 6-1** above), and the analysis of numerous subgroups. Having such a large number of hypothesis tests creates a danger of "false positives" arisingin the analysis, i.e., of finding statistically significant impacts for some outcomes when in fact the true impact of BOND on these outcomes is zero. This danger is called the "multiple comparisons problem." The probability of finding a false positive rises

---

[73]   In particular, a measure collected after random assignment could be affected by the intervention, causing a different portion of the treatment group to be placed in a subgroup than is true of the control group. Hence, the samples whose outcomes are compared in the subgroup analysis no longer represent the same population.

[74]   Impacts on subgroups can be obtained by two methods: splitting the sample to separately analyze data for members of Subgroup A and data for members of Subgroup B as prposed here, or combining data for multiple subgroups but interacting subgroup membership with the indicator variable for treatment group assignment. The BOND subgroup analysis will take the split-sample approach, since it is conceptually cleaner, is methodologically transparent, and makes fewer assumptions. Pooled sample analysis of impacts on more than one subgroup at a time requires the assumptions that (a) the relationship between the outcome measure and the baseline covariates in the model are the same for all subgroups and (b) unexplained variation in the outcome measure is the same for all subgroups. Splitting the sample eliminates these assumptions.

as the number of hypothesis tests performed rises. Given the large number of hypothesis tests to be in BOND, it is very likely that there will be one or more such false positives.

The impact analysis will take two measures to address the multiple comparisons problem in the BOND impact analysis. First, the hypothesis tests will be separated into "confirmatory" tests and "exploratory" tests. Only the two most important outcomes from the evaluation –total earnings and total SSDI benefits– will be included in the confirmatory group.[75] All other impact estimates, including all estimates for subgroups, will be considered exploratory. Statistically significant findings from confirmatory analyses can be interpreted as the proven impacts of BOND without a multiple comparisons problem. In contrast, statistically significant findings from exploratory analyses that do not adjuste for multiple comparisons must be characterized as simply suggestive of what BOND can accomplish, but not proven.

Second, the impact analysis will jointly test whether BOND's estimated effects on total earnings or on total SSDI benefits (or both) is significantly different from zero. This will be determined using a joint F-test[76] on total earnings and SSDI benefits that allows a 10 percent chance of finding a significant impact of BOND on those two outcomes taken together when true impact on each outcome is zero (i.e., a 10 percent chance of Type I error). The joint F-test can be applied separately to these two outcomes for each impact comparison in the design (T1 versus C1, T21 vs. C2, T22 vs. C2, and T21 vs. T22) without a multiple comparison adjustment, since each can be thought of as a study in its own right.

In reporting impact results, the Final Report will contain language of the following sort concerning statistical significance:

> *In the discussions that follow, we use particular language to signify differing levels of statistical confidence. For outcomes that have impacts that are statistically significant at a 1 percent level, we state that the estimates "provide strong confirmatory evidence" (or "provide strong exploratory evidence") that BOND had an effect on the outcomes. For outcomes that have impacts that are significant at a 5 percent level, we state that the estimates "provide confirmatory evidence" (or "provide exploratory evidence) that BOND had an effect on the outcomes. Finally, for outcomes that have impacts that are significant at a 10 percent level, we state that the estimates "provide some confirmatory evidence" (or "provide some exploratory evidence") that BOND had an effect on the outcomes.*
>
> *Among the multiple outcomes analyzed in the BOND Evaluation, two outcomes are of paramount interest [footnote: These two outcomes were identified in the BOND Evaluation Analysis Plan, before the results of the evaluation were available.]:*
>
> - *Total Earnings*

---

[75]   The BOND letter reports and interim reports will contain findings for varying lengths of time. In each report, impacts on total earnings and total SSDI benefits for the periods covered will be treated as confirmatory.

[76]   The joint statistical test will test whether the impacts on total earnings and total SSDI benefits are both equal to zero when these impacts are estimated using a Seemingly Unrelated Regression (SUR) approach. The use of SUR allows the test to take into account any correlation between the two impacts. Since BOND impacts will be estimated using a hierarchical model (Section 6.3.1), the SUR will also have a hierarchical structure.

- *Total SSDI Benefits*

Here we discuss results for these two outcomes in turn. We note that a joint F-test for statistical significance [rejects/fails to reject] the hypothesis of no effect of BOND on these two outcomes considered together at a 10 percent level of significance.

<for each outcome, give the precise definition, discuss the point estimate, discuss significance. Report conventional p-value>

The evaluation also collected information on a large number of other outcomes. We now discuss results for each of those outcomes. We consider these analyses to be exploratory, and therefore do not make any correction for multiple comparisons. We note that even if BOND had no impact, we would expect some of the impact estimates to be statistically significant by chance alone. [footnote: For more information on the multiple comparisons issue and the confirmatory/exploratory distinction, see Schochet (2008).]

The placement of the findings in the various products of the evaluation will also reflect the confirmatory/exploratory distinction.

- Confirmatory results from all four impact comparisons (T1 versus C1, T21 vs. C2, T22 vs. C2, and T21 vs. T22) will be included in all summary documents (e.g., an Executive Summary of a major report, any "Research Briefs").

- Uncorrected tests of significance for all other outcomes and for subgroups, will be explicitly labeled as "exploratory" and not cited prominently in summary documents—especially if there is no or minimal evidence for an impact on either confirmatory outcome.

6.4   Minimum Detectable Effects

Exhibit 6-10 shows estimated minimum detectable effects (MDEs) for the BOND design under reasonable assumptions[77] and given the estimation procedures described in this chapter.[78] For the national beneficiary population represented by the sample, each MDE is the smallest true impact that the study will be able to detect with 80 percent probability.[79] Larger impacts will be detectable with a higher probability, and smaller ones with a lower probability. Shown here are MDEs for the two outcomes that are central to the demonstration's objectives—annual earnings and annual SSDI benefits. These outcomes are closely related to the total earnings and total SSDI benefits outcomes that will be treated as confirmatory with respect to multiple comparisons.

Stage 1 MDEs. The top panel of the exhibit addresses Stage 1 and its comparison of the T1 and C1 samples, the former getting the $1 for $2 benefit offset and the latter continuing under current law. MDEs

---

[77]   The assumptions are shown at the bottom of the exhibit.

[78]   That is, using multi-level modeling with individual covariates and analysis weights.

[79]   The population represented is all those on the rolls at the time the sample is drawn who meet the BOND eligibility criteria apart from the requirement that they reside in a BOND site area. The MDEs are based on a two-tailed test, because the hypothesized impacts on benefits and earnings both have ambiguous signs.

---

are shown for both all beneficiaries and those who have been on the rolls for less than three years when first offered the offset ("short-duration" beneficiaries). As discussed in Chapter One, short-duration beneficiaries will constitute half of the T1 sample. Although they will constitute less than half of the C1 sample, the number in the C1 sample will be larger than the number in the T1 sample. This will provide adequately precise impact estimates for short-duration beneficiaries, in order to project the impacts of a national program in the long term when all beneficiaries would likely be offered the offset shortly after they enter SSDI.

As can be seen in the first row of the exhibit, for the sample of 80,000 eligible beneficiaries who will receive the $1 for $2 benefit offset at Stage 1, the study will be able to detect impacts on annual earnings as small as $339. Based on current beneficiary earnings levels, this effect would be about 13 percent of the control group mean earnings. The MDE for impacts on annual SSDI benefits for Stage 1 beneficiaries is $94, or less than one percent of the control mean. The greater precision for impacts on benefits reflects the fact that the variance of benefits, controlling for baseline characteristics, is much lower than the corresponding variance of earnings, and its mean is higher.

Exhibit 6-10.   Minimum Detectable Effects for Earnings and Benefits

Impact Comparison	Sample Sizes	MDE for Annual	
		Earnings	SSDI Benefits
Offset vs. No Offset – Stage 1			
All beneficiaries	80,000 (T1) 594,000 (C1)	$339	$94
Short-duration beneficiaries	40,000 (T1) 112,000 (C1)	$314	$83
Offset vs. No Offset – Stage 2			
All beneficiaries	4,800 (T21) 4,800 (C2)	$556	$110
Short-duration beneficiaries	2,400 (T21) 2,400 (C2)	$736	$134
Offset + EWIC vs. Neither	3,000 (T22) 4,800 (C2)	$616	$118
Offset + EWIC vs. Offset	3,000 (T22) 4,800 (T21)	$616	$118

Note: MDE's are based on 80 percent power with a 5 percent significance level in a two-tailed test for statistically significant impacts, based on multiple comparisons adjustment for the two outcomes shown (earnings and SSDI benefits). Calculations reflect a finite population correction and adjustments for the design effects of site selection, proportional allocation of sample across sites, and oversampling of short-duration beneficiaries. Calculations also take into account the likely cross-site variation in demonstration impacts. The estimated within-site variance of the outcome and cross-site variance of the impacts used here are derived from Project NetWork data.

This level of precision is for all beneficiaries in the T1 group. The BOND team expects that the great majority of the T1 group will be unaffected by BOND; for the rest—those who have their earnings affected by the offset—the impact must be proportionately larger to be detected. For the subset of beneficiaries affected by the treatment (e.g., who work more), MDEs will be much larger. If, for example, 10 percent of those exposed to the offset respond by raising their earnings,[80] the earnings increase of this

---

[80]   It is plausible that 10 percent will increase their earnings because of the offset. Historical data suggest that the percent of the control group with earnings in a typical year will be just above 10 percent, and that more than twice as many will have earnings at some point during the demonstration period, including a substantial share with earnings above the annualized value of SGA in at least one year. For instance, Livermore et al. (2009)

group must be 10 times as large as the MDEs shown here to be detectable, because—for example—a $500 mean impact for this subgroup would raise the overall treatment group mean earnings by only $50, which would not be detectable with 80 percent confidence. In this example, the 10 percent experiencing earnings effects would need impacts of $3,390 on average for the resulting effect on the entire T1 group of $339 to be detectable with 80 percent power. This is a large effect relative to the annualized SGA level ($12,000 in 2010 for non-blind beneficiaries) and relative to the mean earnings of control group beneficiaries who work (under $10,000).[81]

MDEs for short-duration beneficiaries alone are smaller than those of the Stage 1 sample as a whole, $314 for annual earnings and $83 for annual benefits.[82]

Stage 2 MDEs. MDEs for the Stage 2 impact analyses appear in the middle and lower panels of **Exhibit 6-10**. Among the volunteers for the Stage 2 treatments, the study will have the greatest precision when estimating the impact of the $1 for $2 benefit offset with administrative enhancements (T21) compared to current law with administrative enhancements (C2); this comparison involves the two largest Stage 2 samples (4,800 members each). These samples—shown in the middle panel of the exhibit—allow one to be confident of detecting impacts of $556 on annual earnings (21 percent of the control mean) and $110 on annual SSDI benefits (around 1 percent of the control mean). MDEs for short-duration beneficiaries—projected to be half of the Stage 2 sample, but projected to be more likely to use the offset—are larger than for the Stage 2 sample as a whole: $736 for earnings and $134 for benefits.

The final panel of the exhibit provides MDEs for the analysis of the impact of the offset-plus-enhanced-work-incentives-counseling intervention with administrative enhancements (T22) compared to the offset-only intervention plus administrative enhancements (T21), or compared to current law with administrative enhancements (C2). Here, it will be possible to detect with confidence impacts of $616 on annual earnings, or about 23 percent of the control mean. As for the other contrasts, the study will have much better precision for estimating impacts on SSDI benefits—one can be confident of detecting impacts of $118 on annual benefits, or about 1 percent of the control mean.

---

found that 10.3 percent of SSDI beneficiaries in the 2006 National Beneficiary Survey (NBS) were employed at the time they were interviewed, and 13.5 percent had worked in the previous calendar year. Livermore (2009) classified 40 percent of respondents to the 2004 NBS as "work-oriented" because of work, work-related activities, or work aspirations. For this group, she found that 50 percent had earnings over a four-year period, 24 percent had earnings in all four years, and 15 percent had earnings above the annualized SGA level in at least one year. These statistics imply that 20 percent of all SSDI beneficiaries had earnings in at least one of the four years, 9.6 percent had earnings in all four years, and 6.0 percent had earnings above SGA in at least one year.

[81] The expectation that control group members who work will earn less than $10,000 per year is based on the 2006 NBS and the BOPD findings. Livermore et al. (2009) report that SSDI beneficiaries who were working when interviewed for the 2006 NBS earned a mean of $675 during the survey month, which would imply mean annual earnings of $8,100 if the same beneficiaries work in all 12 months, and less if otherwise. Mean annual earnings for BOPD control subjects with earnings were a little less than $10,000 in the year after random assignment and a little more in the second year (Weathers and Hemmeter, forthcoming).

[82] Ordinarily it is to be expected that a MDE's for a subgroup would be larger than for the population as a whole. In this case, however, the design effect that results from oversampling short-duration beneficiaries so that they are 50% of the T1 and C1 core groups inflates the MDE's for the whole Stage 1 sample above those for the short-duration subgroup alone.

The Stage 2 MDEs substantially exceed their Stage 1 counterparts. Stage 2 impacts are expected to be larger, however, since everyone in the T21 and T22 treatment groups will have volunteered for a chance to receive the offset and/or EWIC. Presumably, large shares of such individuals will choose to use the offset and/or EWIC when assigned to the treatment groups, making any impacts on earnings and benefits that occur much more widespread in the Stage 2 treatment groups than in the Stage 1 treatment group— and hence making the expected *mean* impact much larger at Stage 2 than Stage 1.

6.5   Computer Software

The BOND evaluation team will use software capable of estimating impacts within the hierarchical linear model described in section 6.3.1. The software must be capable also of estimating parameters in the logistic version of this model for binary outcomes. A third requirement is that the software be capable of correctly handling the analytic weights that will be used to assure national representativeness for BOND impact findings. The Stata 11 software package, and in particular, the "gllamm" (generalized linear latent and mixed models) command of this software, provides all these capabilities and will be used to estimate the net impacts of BOND. [83]

6.6   Timeline for Reporting Impact Findings

The net impact analysis findings will be conveyed to SSA through a series of reports over the life of the project according to the schedule shown in **Exhibits 6-11** and **6-12**. As can be seen, and as described in more detail in Chapter Three, the availability of data will drive the reporting schedule. On the one hand, SSDI program administrative data will be available to the evaluation team after only a brief lag (two months). On the other hand, SSA earnings data (in its final form) will become available for analysis after a considerably longer lag, about 14 months from the end of the calendar year covered by the data. Among the other administrative data that will be collected, Medicare records will be available after a relatively short lag (six months), while Rehabilitation Services Administration and Medicaid records will be available after a long lag (27 and 39 months, respectively). Full details on the data period of each administrative data source included in each report are provided in our discussion of reporting in Chapter Nine.

BOND impact findings will be reported in a combination of short annual letter reports (that report administrative data impacts only) and longer interim and synthesis reports (that report both administrative and survey data impacts). These reports are described below.

- **Stage 1 Annual Letter Reports:** The BOND Evaluation team will deliver four annual letter reports for the Stage 1 sample of beneficiaries. These reports will provide net impacts comparing outcomes of T1 beneficiaries with those of C1 beneficiaries. The reports will contain impact findings on earnings and employment, SSDI benefits, and employment-related outcomes available in administrative data (e.g., TWP entry, TWP completion, and earnings above BYA). The reports will be completed by December 2012, December 2013, December 2015, and December 2017, respectively.

---

[83]   The HLM 6 (Hierarchical Linear and Nonlinear Modeling) software package published by Scientific Software International is another software package that meets the three requirements listed here.

- **Stage 1 Interim participation, process, and impact reports:** The net impact analyses in the Stage 1 interim reports will also provide net impacts comparing outcomes of T1 beneficiaries with those of C1 beneficiaries. The first interim report, to be submitted in December 2015, will use administrative data and the Stage 1 36 month survey to present net impacts for the first one to three years after random assignment, depending on data availability of outcome. The second report, to be completed by December 2017, will use administrative data to present net impacts at the end of the project approximately six years after random assignment (depending on data availability of outcome).

- **Stage 2 Annual Letter Reports:** The Stage 2 annual letter reports will provide three sets of net impacts comparing (i) outcomes of T21 beneficiaries with those of C2 beneficiaries, (ii) of T22 beneficiaries with those of C2 beneficiaries, and (iii) of T22 beneficiaries with those of T21 beneficiaries. As with the Stage 1 annual letter reports, these reports will contain impact findings on earnings and employment, SSDI benefits, and employment-related outcomes available in administrative data (e.g., TWP entry, TWP completion, and earnings above BYA). The three Stage 2 annual letter reports will be completed by June 2014, June 2015, and June 2017.

- **Stage 2 Interim participation, process, and impact reports:** Stage 2 net impacts draw upon outcomes from administrative data, the Stage 2 12-Month Interim Survey, and the Stage 2 36-Month Follow-up Survey. Because random assignment for Stage 2 will continue until September 2012, the first Stage 2 interim report, to be submitted in March 2014, will only present net impacts using administrative data outcomes. The second report, to be completed by June 2016, will present net impacts on outcomes drawn from both administrative data and the Stage 2 12-Month Interim Survey. (Net impacts on outcomes from the Stage 2 36-Month Follow-up Survey will be included in the Final Report.)

- **Synthesis reports:** The final report on participation, impacts, benefits and costs, to be submitted in October 2017, will incorporate findings from the net impact analysis using information from both Stage 1 and Stage 2 of the demonstration.[84] The report will present net impact findings based upon administrative data and the Stage 1 and Stage 2 surveys. While all Stage 1 net impacts will be shown also in the two Stage 1 interim reports, the final report will be the sole place where the Stage 2 net impacts for the last year of administrative data and for outcomes from the Stage 2 36-Month Follow-up Survey are presented.

---

[84]   The net impact findings in the final synthesis report (October 2017) will overlap with those in the second Stage 1 interim report (due in December 2017). The difference between the reports is that the second Stage 1 interim report will not present impacts on outcomes from the Stage 1 36-Month Follow-up Survey (already presented in the first Stage 1 interim report), whereas the final synthesis report will include all Stage 1 impacts from administrative and survey data.

Exhibit 6-11.   Timeline for the Net Impact Analysis

	Year								
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Implementation Milestones									
Operate local BOND site offices			———	—					
Pilot solicitation and random assignment (Stage 2)			—						
Stage 1 random assignment			—						
Stage 1 outreach			—						
Stage 2 main solicitation			——	—					
Stage 2 random assignment			——	—					
Offset, WIC, and EWIC in place			————————————————————						
Data Collection									
Site Visits			· ·	·	· ·	·	·		
Stage 2 Baseline Survey			——	—					
Stage 2 12 Month Survey				——	—				
Stage 2 36 Month Survey						——	—		
Stage 1 36 Month Survey						—			
Administrative Data*			———————————————						
Reports									
Stage 1									
Annual letter reports (4)					·	·	·	·	
Interim participation, process, and impact reports (2)							·		·
Stage 2									
Annual letter reports (3)						·	·		·
Interim participation, process, and impact reports (2)						·		·	
Synthesis Reports									
Final report on participation, impacts, and benefits and costs									·
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**

*   Administrative data used for the impact study includes BODS, SSA Earnings data, TRF, Medicare data, Medicaid data, and RSA data.

Exhibit 6-12.   Deliverable Schedule for Impact Findings

Deliverable	Draft submission date	Will Include Impacts on These Outcomes	Reporting Period
Stage 1			
Annual Letter Reports (1)	December 2012	Earnings and Employment	Jan. 2011-Dec. 2011 (Preliminary for 2011)
		SSDI Benefits	Jan. 2011-Dec. 2011
		Employment-Related Outcomes	Jan. 2011-Dec. 2011
Annual Letter Reports (2)	December 2013	Earnings and Employment	Jan. 2011-Dec. 2012 (Preliminary for 2012)
		SSDI Benefits	Jan. 2011-Dec. 2012
		Employment-Related Outcomes	Jan. 2011-Dec. 2012
Annual Letter Reports (3)	December 2015	Earnings and Employment	Jan. 2011-Dec. 2014 (Preliminary for 2014)
		SSDI Benefits	Jan. 2011-Dec. 2014
		Employment-Related Outcomes	Jan. 2011-Dec. 2014
Annual Letter Reports (4)	December 2016	Earnings and Employment	Jan. 2011-Dec. 2015 (Preliminary for 2015)
		SSDI Benefits	Jan. 2011-Dec. 2015
		Employment-Related Outcomes	Jan. 2011-Dec. 2015
Interim Participation, Process, and Impact Report (1)	December 2015	Earnings and Employment	Jan. 2011-Dec. 2013 (Preliminary for 2013)
		SSDI Benefits	Jan. 2011-Dec. 2013
		Employment-Related Outcomes	Jan. 2011-Dec. 2013 / Stage 1 Survey
		Other Benefits	Jan. 2011-Dec. 2013 / Stage 1 Survey
		Training-Related, Health and Functioning, and Material Hardship Outcomes	Stage 1 Survey
Interim Participation, Process, and Impact Report (2)	December 2017	Earnings and Employment	Jan. 2011-Dec. 2015 (Final for 2015)
		SSDI Benefits	Jan. 2011-Dec. 2016
		Employment-Related Outcomes	Jan. 2011-Dec. 2016
		Other Benefits	Jan. 2011-Dec. 2016
Stage 2			
Annual Letter Report (1)	June 2014	Earnings and Employment	Jan. 2011-Dec. 2012
		SSDI Benefits	Jan. 2011-Dec. 2013
		Employment-Related Outcomes	Jan. 2011-Dec. 2013
Annual Letter Report (2)	June 2015	Earnings and Employment	Jan. 2011-Dec. 2013
		SSDI Benefits	Jan. 2011-Dec. 2014
		Employment-Related Outcomes	Jan. 2011-Dec. 2014
Annual Letter Report (3)	June 2017	Earnings and Employment	Jan. 2011-Dec. 2015
		SSDI Benefits	Jan. 2011-Dec. 2016
		Employment-Related Outcomes	Jan. 2011-Dec. 2016

Deliverable	Draft submission date	Will Include Impacts on These Outcomes	Reporting Period
Interim Participation, Process, and Impact Report (1)	March 2014	Earnings and Employment	Jan. 2011-Dec. 2011
		SSDI Benefits	Jan. 2011-Dec. 2012
		Employment-Related Outcomes	Jan. 2011-Dec. 2012
		Other Benefits	Jan. 2011-Dec. 2012
Interim Participation, Process, and Impact Report (2)	June 2016	Earnings and Employment	Jan. 2011-Dec. 2014
		SSDI Benefits	Jan. 2011-Dec. 2015
		Employment-Related Outcomes	Jan. 2011-Dec. 2015 / Stage 2 12-month Survey
		Other Benefits	Jan. 2011-Dec. 2015 / Stage 2 12-month Survey
		Training-Related, Health and Functioning, and Material Hardship Outcomes	Stage 2 12-month Survey
Synthesis Reports			
Final Report on Participation, Impacts, and Benefits and Costs	October 2017	Earnings and Employment	Jan. 2011-Dec. 2015
		SSDI Benefits	Jan. 2011-Dec. 2016
		Employment-Related Outcomes and Other Benefits	Jan. 2011-Dec. 2016 / Stage 1 Survey / Stage 2 12-month and 36-Month Surveys
		Training-Related, Health and Functioning, and Material Hardship Outcomes	Stage 1 Survey / Stage 2 12-month and 36-Month Surveys

Notes: Data availability (see Chapter Three for more details) is the basis for the anticipated time frames. For the most part, reports will include a full year of administrative data. Three exceptions are the Early Assessment Report, the Policy Brief based on the Early Assessment Report, and Annual Letter Report (1) for Stage 1, which will provide partial year data on outcomes during the early stages of implementation. The final report will include a full summary of outcomes. Notes to SSA, rather than formal reports, will summarize information from site visits 1, 2, and 4. All reporting periods listed above are for final datafiles, unless otherwise noted.

Employment-related outcomes for annual letter reports, Stage 1 Interim Impact Report (2017), and Stage 2 Interim Impact Report (2014) are limited to those outcomes derived from SSA administrative data: TWP entry, TWP completion, number of TWP months used, earnings above BYA, use of grace period, use of IRWE, and number of TTW tickets assigned.

Chapter Seven. Benefit-Cost Analysis

The BOND benefit-cost analysis will measure and compare the costs and benefits of the different demonstration treatments, relative to each other and to the current program, from multiple perspectives including society as a whole, beneficiaries, taxpayers, and SSA. Its findings will provide information on the desirability of incorporating a benefit offset into the SSDI program as a national policy.

In a sense, the benefit-cost analysis of BOND can be viewed as the end product of the evaluation of the demonstration because much of it will be done after work on the other components of the evaluation is completed. This is necessary because it will utilize and summarize many of the other components of the evaluation. The impact analysis is of special importance because it will provide estimates of many of the net benefits and costs of BOND. The process analysis will help ensure that the impacts are interpreted correctly in incorporating them into the benefit-cost analysis and that important benefit and cost components are not overlooked. The participation analysis will be used in determining some of the costs of operating BOND.

This chapter presents a detailed description of how the BOND benefit-cost analysis will be conducted and reported. Section 7.1 establishes the goals and framework for conducting a benefit-cost study. Section 7.2 then describes how the analysis will value each of the benefit and cost components introduced in Section 7.1. Once these values are obtained, a number of steps are needed to construct the final benefit-cost analysis. Section 7.3 lists these steps and explains how they will be accomplished. Section 7.4 establishes a time line for producing the benefit-cost analysis and discusses how findings from the analysis will be reported.

7.1   Goals and Framework for the BOND Benefit-Cost Analysis

This section provides a brief description of the objectives of benefit-cost analysis and then describes the framework that will be used to conduct a benefit-cost analysis of BOND.

7.1.1   An overview of benefit-cost analysis

At its simplest, a benefit-cost analysis of a government program estimates the dollar values of the costs and benefits that accrue from a program, allocates the individual costs and benefits to the segments of society to which each accrues (for example, program participants and the government), sums the costs and sums the benefits, and either subtracts the former from the latter to compute program *net* benefits (or *net* costs) or divides the former into the latter to compute a *benefit-cost ratio*. The object of a benefit-cost analysis is to determine whether the benefits of the program outweigh its costs from a societal point of view (i.e., whether net benefits are positive or the benefit-cost ratio exceeds one when viewed from the perspective of society as a whole) and, hence, whether the program is economically efficient. If it is not economically efficient, the analysis may suggest ways in which it might be made so. If it cannot be made economically efficient, then consideration should be given to terminating the program. Additional, related objectives of benefit-cost analysis are to assess whether a program improves the overall well-being of those who participate in it and to determine what the net effect of the program is on the government's budget.

7.1.2   Conducting a Benefit-Cost Analysis of BOND

The BOND benefit-cost analysis will ascertain whether the program's net benefits are positive from a societal point of view and, hence, whether BOND is economically efficient. It will also establish whether the program improves the well-being of those who participate in it and what the net effect of the program is on the government's budget, at both the federal and state/local levels. Thus, it will provide information critical to the decision of whether BOND should be rolled out nationally. Each of the different treatment group comparisons from the impact analysis will have its own benefit-cost analysis: the benefit offset at Stage 1 compared to standard benefit payment rules, the benefit offset at Stage 2 compared to standard rules, the benefit offset plus EWIC at Stage 2 compared to standard rules, and the benefit offset plus EWIC at Stage 2 compared to the benefit offset only.

7.1.3   The Benefit-Cost Accounting Framework

Exhibit 7-1 presents the accounting framework that will be used in conducting the benefit-cost analysis of BOND. In the exhibit, plus signs (+) indicate anticipated sources of benefits and minus signs (-)indicate anticipated sources of costs from the point of view of the segments of society listed in the column headings. The zeros (0) imply that there is no anticipated effect. The question marks (?) indicate that the effect on the segment of society is uncertain—that is, whether it will be a benefit or cost is unknown. In instances in which the theoretical analysis of Chapter Two led to a hypothesized direction of effect, the hypothesized direction is reflected here as well with one exception—the uncertain direction of effects on hours worked and earnings predicted in Chapter Two is acknowledged (top left box of the matrix) but—to better convey how the other elements in the matrix are related to work and earnings and to one another—these effects are assumed to be positive throughout the remainder of the exhibit.

The actual benefit-cost analysis will be presented in tables similar to **Exhibit 7-1**. However, in the actual benefit-cost analysis, the dollar values will be filled in for each cell. The "bottom line" for each column, which, conceptually, is the sum of all the positive benefits minus all the negative costs in that column, will indicate total net benefits (or total net costs) to the segment of society listed in the column heading measured in dollars.

As it must, **Exhibit 7-1** addresses the so-called "standing issue" in benefit-cost analysis—that is, whose benefits and costs should be counted in conducting benefit-cost analysis. Effects on individuals who might become beneficiaries through induced entry are not considered, because the evaluation does not seek to measure the consequences of this phenomenon. The exhibit does give standing to SSDI beneficiaries and the government, both of which will be directly affected by BOND. The effects on the government (or, viewed alternatively, the taxpayers who support the government) are further disaggregated into effects on the federal government and effects on state and local government. Finally, a distinction is made between effects on the SSA trust fund and effects on other parts of the federal government. Society as a whole is also included in the exhibit. Benefits and costs to society as a whole are simply the algebraic sum of benefits and costs to beneficiaries, the government, and certain groups that are not listed in the table (but are discussed below). The "Society" column indicates whether each item is a benefit to society (+), a cost to society (-), or a transfer between two portions of society (0) that produces no net benefit or net cost for society as a whole.

The individual benefits and costs listed in **Exhibit 7-1** will be measured on a per-beneficiary basis, for an average person in the random assignment sample.

Exhibit 7-1.   Potential Benefits and Costs of BOND, By Accounting Perspective

Component of Analysis	Expected Directional Change of Component	Benefici-aries	Federal Government SSA Trust Funds	Other	State & Local Govern-ment	Society	Obtained from the Impact Analysis
Pre-tax earnings	Uncertain *(Assumed Higher)*	+	0	0	0	+	✓
Fringe benefits from work	Higher	+	0	0	0	+	✓
SSDI benefits	Uncertain	?	?	0	0	0	✓
SSI benefits	Lower	-	0	+	+	0	✓
SSDI administrative costs	Higher	0	-	0	0	-	
SSI administrative costs	Lower	0	0	+	+	+	
Medicare/Medicaid payments	Uncertain	0	0	?	?	0	✓
Medicare and Medicaid administrative costs	Uncertain	0	0	?	?	?	
Payroll taxes	Higher *	-	+	+	0	0	
Income and sales taxes	Higher *	-	0	+	+	0	
UI benefits	Higher *	+	0	-	-	0	✓
UI administrative costs	Higher *	0	0	-	-	-	
TANF payments	Lower *	-	0	+	0	0	✓
TANF administrative costs	Lower *	0	0	+	0	+	
SNAP (food stamps) benefits	Lower *	-	0	+	0	0	✓
SNAP administrative costs	Lower *	0	0	+	+	+	
BOND administrative costs	Higher	0	-	0	0	-	
Cost of EWIC	Higher	0	-	0	0	-	
Cost of Ticket-to-Work	Higher	0	-	0	0	-	
State VR service costs	Higher	0	0	-	-	-	✓
Work-related expenses (e.g., child care, transportation, clothing)	Higher	-	0	0	0	-	✓
Output from volunteer work	Lower *	0	0	0	0	-	
Effects on health and self-sufficiency	Uncertain	?	0	0	0	?	✓
Quality of life	Higher	+	0	0	0	+	✓
Non-market time	Lower *	?	0	0	0	?	✓
Value placed by public on increasing work among SSDI recipients	Higher *	0	0	0	0	+	
Deadweight loss	Uncertain	0	0	0	0	?	
Labor market effects on third parties	Negative *	0	0	0	0	-	
Net Benefits (+) / Costs (-)		**??**	**??**	**??**	**??**	**??**	

*Assumes that earnings and hours worked are increased by BOND.

7.1.4   Different Accounting Perspectives on Benefits and Costs

Of the perspectives listed in the column headings in **Exhibit 7-1**, the SSA trust funds is of particular importance because BOND is being tested by the Social Security Administration to determine whether the budgetary position of the trust funds can be improved as a result of reducing the financial disincentives and other obstacles to increasing the earnings of SSDI beneficiaries and thereby reducing their dependence on benefits. If overall earnings are increased as a result of BOND as the exhibit assumes, then payments into the OASI and DITrust Funds through payroll taxes will increase. SSDI benefits may or may not decline for reasons discussed in Chapter Two and as indicated by the "?" entry in the exhibit. A decline would represent a saving to the DI Trust and an increase a cost to that fund. Even if all these results are favorable they will be offset to some extent (and possibly more than offset) by various costs to the trust funds associated with operating BOND, including BOND administrative costs and costs incurred in delivering EWIC or from heightened use of Ticket to Work services. A key objective of the benefit-cost analysis will be to determine whether in net BOND is a cost or benefit to the SSA trust funds.

The budgetary position of the rest of the federal government, as well as that of state governments, will also be affected by BOND. This will mainly occur through BOND's effects on employment and earnings. For example, if BOND increases employment among current beneficiaries, SSI and TANF payments as well as SNAP (food stamp) benefits and the costs of administering these programs should decline, but costs accruing to the Unemployment Insurance program could increase because some of these new workers will ultimately lose their jobs and qualify for Unemployment Insurance in doing so. If earnings increase as a result of BOND, then taxes paid to the government will increase. As indicated in **Exhibit 7-1**and discussed below, there is some uncertainty concerning the direction of the effects of BOND on the Medicare and Medicaid programs. However, if the costs of these programs decline because of BOND, this would improve the budgetary positions of federal and state governments.

BOND would be expected to produce net gains for SSDI beneficiaries. Under BOND, beneficiaries can always elect not to work, but if they do decide to work above SGA, they can keep more of their benefits than was the case without BOND. As long as some beneficiaries who otherwise would not have worked choose to do so under BOND, they will, with rare exceptions, be better off in monetary terms than they would have been without BOND. Presumably, this might also increase their quality of life. Nonetheless, those SSDI beneficiaries who choose to work will incur costs under BOND. As their earnings increase as a result of BOND, their SSDI benefits will fall, they will pay more in taxes, they may receive fewer benefits from other programs such as SNAP, and they will relinquish time outside the labor market.

7.1.5   Individual Benefit and Cost Components

Further explanation of several of the individual benefit and costs components listed in **Exhibit 7-1** may be helpful. These explanations are provided below:

First, some guidance in interpreting the pluses, minuses, and zeros in the exhibit may be useful. Many of the items that are listed in the exhibit (e.g., changes in earnings and fringe benefits and improvements in health and enhanced self-sufficiency and quality of life)affect both demonstration subjects and society as a whole. Other direct effects on beneficiaries, including changes in SSDI and SSI benefit payments, benefit the federal government if BOND is successful in moving beneficiaries off disability benefits and

associated medical benefits over the long run.[85] These benefits are called "transfers" because there is a benefit to one entity (the government) and an offsetting cost to another (beneficiaries); and, consequently, changing the level of these benefits has no effect on society as a whole. Additional transfers that benefit the trust funds and/or other government entities take place through the tax system. These include increased payroll taxes and increased income and sales taxes if beneficiaries increase their earnings.

Second, although many government benefit programs, such as SSDI, SSI, UI, SNAP, and TANF are transfers, the costs of administering these programs are not transfers, as these costs involve purchases of real resources. If BOND affects the number of SSDI beneficiaries who receive payments under these programs, the costs of administrating these programs will change and this will affect both the government and society.

Third, unlike BOND's effects on SSDI, UI, and other government benefit payments, its effects on Medicare and Medicaid payments should not be treated as transfers because they directly involve the purchase and use of health care resources, not just the transfer of funds from one group in society to another. Thus, if BOND reduces Medicare and Medicaid payments, then, as long as the health of beneficiaries does not deteriorate (see point four below), both the federal and state governments, as well as society as a whole, will be better off. However, initially Medicare payments could be higher as the offset keeps some beneficiaries on the SSDI rolls who otherwise would have left.

Fourth, a reduction in Medicare and Medicaid payments could, of course, adversely affect the health of beneficiaries. But this is accounted for in **Exhibit 7-1** in the row for BOND's effects on health and daily functioning. However, it is also possible that BOND has a positive effect on health and functional status through its effects on employment, as there is considerable evidence that employment has positive effects on health. Thus, the net effect of BOND on the health and self-sufficiency of SSDI beneficiaries is uncertain.

Fifth, some of the costs listed in **Exhibit 7-1** constitute outlays by SSA. For example, SSA-funded employment supports (including Ticket-to-Work and work incentive counseling) will be received by both intervention and control group members, with a higher level of these services expected to be going to the intervention groups. This will result in a net cost to the DI Trust Fund and, hence, also a social cost. Vocational rehabilitation (VR) program costs accrue to both state and federal governments and thus society as a whole.

Sixth, increased employment may add expenses to beneficiaries' budgets (e.g., transportation, child care). These expenses are a social cost as well.

Seventh, if SSDI beneficiaries work more, they obviously have less time to do other things. On the one hand, this lost non-market time (sometimes called "leisure") is a cost to them if they value the non-market time they relinquish. On the other hand, it would be a benefit if the absence of employment leaves them feeling socially isolated and unproductive and struggling to fill the hours of a day in a rewarding way.

---

[85]   However, initially, SSDI benefits could be higher as the offset keeps some beneficiaries on the SSDI rolls who otherwise would have left.

Eighth, there are several benefits and costs listed in **Exhibit 7-1** that affect segments of society that do not appear in the exhibit. Consider the following four examples:

1. If BOND increases employment among beneficiaries, then some of these jobs might come at the expense of others competing for the same jobs. At least in the short-run, the increased competition for jobs could make a difference, particularly in areas where unemployment is high, because firms can not readily expand production, and wages cannot adjust downwards to induce employers to offer more jobs.

2. If beneficiaries reduce the amount of volunteer time they spend in order to spend more time in paid employment, then those who reaped benefits from these voluntary efforts lose.

3. If BOND increases employment among beneficiaries and at least some members of the public value the increase in employment in and of itself—that is, beyond any tax savings they may receive—then this is a benefit of the program.

4. On the one hand, if BOND results in net costs to the government, then taxes must be higher than they would otherwise be and the economic distortions caused by taxes would increase. On the other hand, if BOND results in net benefits accruing to the government, then taxes can be lower than they would otherwise be and the economic distortions that are caused by taxes would be reduced. For example, taxes on earnings reduce incentives to work and taxes on investment reduce incentives to invest. These distortions (usually called "deadweight losses" or "excess burden") result in losses in economic efficiency.

The consequences of these factors are shown as "+", "-", or "?" entries in the "Society" column.

7.1.6 Valuing the Benefits and Costs

The goal of the BOND benefit-cost analysis will be to replace as many as possible of the "+" and "-" and "?" entries in **Exhibit 7-1** with their corresponding dollar values. As shown in the last column of the exhibit, many of these dollar values will be directly estimated in the impact analysis. The dollar values of other costs and benefits will have to be obtained by other means; but, as detailed in Section 7.2, in many instances the estimation will combine findings from the impact analysis with other information.

One of the benefits listed in the exhibit, BOND's effect on the quality of life, cannot be estimated in monetary terms, although it will be quantified as part of the evaluation; and two others, the value the public places on increasing work among SSDI beneficiaries and labor market effects on third parties, will not even be quantified, although their likely implications for the benefit-cost findings will be assessed to the extent possible. The evaluation will obtain monetary values for deadweight loss, the value to beneficiaries of losses of nonmarket time, output from voluntary work, and (possibly) BOND's effect on health and self-sufficiency. However, problematic assumptions must be made to estimate these monetary values. Thus, alternative estimates, based on alternative assumptions, will be obtained for these items. We will use these alternative estimates in sensitivity tests of the monetary value of total net benefits (or costs). Sensitivity analysis will also be used to address the fact that the impact estimates will be subject to sampling variability. The sorts of sensitivity analyses that will be conducted are further discussed throughout this chapter and summarized in Section 7.3.1.

As previously indicated, the monetized benefits and costs will all be presented as dollar values per beneficiary in the randomized study sample. These estimates will each represent the net effects of BOND

on benefits and costs—that is, the difference between the intervention group and the control group. For example, both the intervention and control group members will participate in work incentive counseling and Ticket-to-Work, but the former are expected to make greater use of these services and, hence, incur greater costs. The benefit-cost analysis will rely on measures of net effect of BOND on the costs of these services—that is, the difference between those costs incurred by the intervention group members and those incurred by the control group members.

7.2.   Computing Benefits and Costs

The first step in a benefit-cost analysis is to decide whose benefits and costs count (the standing issue).The second step is to list the individual costs and benefits. These steps are accomplished by **Exhibit 7-1** and the related discussion above. The third step, and in some ways the most crucial step, is to put dollar values on as many of the costs and benefits as possible and determine how best to treat those costs and benefits that cannot be measured in dollars. These topics are discussed in this section.

7.2.1   The Role of the Impact Analysis

Many of the benefits and costs that are needed for the benefit-cost analysis will be estimated in dollars as part of the impact analysis. For example, impacts on earnings, SSDI and SSI benefits, and Medicare and Medicaid payments will be measured monthly or quarterly over the entire demonstration period. In addition, impacts on Unemployment Insurance benefits, TANF payments, SNAP benefits, out-of-pocket vocational rehabilitation expenses, and work-related expenses will be estimated at 36 months after randomization.

Because the latter group of monetized impacts is estimated for only a single point in time, but the benefit-cost analysis requires that the stream of values over the entire demonstration period be available, it will be necessary to determine their values during months other than just the 36th month after randomization. One way to do this is to use regression analysis to determine the time trend of those impacts that are estimated over the entire demonstration period. For example, several simple regressions will be estimated with quarterly earnings impacts as the dependent variable and alternative time trend variables (e.g., a linear variable and a quadratic) on the right hand side. Based on R-squares and F-values, the regression that provides the best fit will be selected and it will be assumed that BOND's impacts on fringe benefits and work-related expenses have a similar time trend as the time trend indicated by the regression for BOND's impact on earnings. This procedure assumes, quite plausibly, that fringe benefits and work-related expenses are highly correlated with earnings. Similar regressions will be estimated with the impact on quarterly employment as the dependent variable. These will be used to predict the time trend of unemployment insurance receipts over the demonstration period.

Unfortunately, but inevitably, the impact analysis will not provide estimates of the monetary values for every one of the costs and benefits listed in **Exhibit 7-1**. However, as will be seen, the impact analysis will provide impact estimates in non-monetary units that will be utilized in estimating many of the monetized values.

7.2.2   Valuing Other Benefits and Costs

For purposes of the benefit-cost analysis, estimates are needed of the monetary values of the potential effects of BOND on individual and sales taxes, payroll taxes, the administrative costs of operating various government transfer programs (e.g., SSI and TANF), output from volunteer work, deadweight loss, health

and self-sufficiency, and nonmarket time. This subsection describes how this will be accomplished in each case.

Income and Sales Taxes

Because taxes are not measured directly in the data collected for the BOND evaluation, they need to be imputed. Fortunately, the information needed to do this is readily available.

Statistics published by the Congressional Budget Office indicate the percentage of household income paid to the federal government in individual income taxes by income quintile.[86]According to these statistics, in 2006, the figures from lowest to highest income quintile were, respectively: -6.6 percent, -0.8 percent, 3.0 percent, 6.0 percent, and 14.1 percent. The negative values for the bottom two income quintiles resulted from the refundable Earned Income Tax Credit and child tax credits.

State and local taxes are also important. Fortunately, the Retirement Living Information Center of the Tax Foundation provides a useful table that indicates the percentage of income paid in state and local taxes (e.g., state income taxes, property taxes, and sales taxes) in each state in 2008.[87] For example, the table indicates that the state and local tax burden was 10.8 percent in Maryland and 8.4 percent in Texas in 2008. The average for all states was 9.7 percent in 2008.

Both the Congressional Budget Office and the Tax Foundation update their figures annually. We will multiply the updated percentages by the amount of BOND's impact on household income to estimate the resulting change in taxes. In using the Congressional Budget Office figures, we will first determine the fraction of the BOND research sample in each income quintile and then use these proportions as weights in computing the average percentage of household income paid to the federal government through the individual income tax. In using the information from the Retirement Living Information Center on state and local taxes, any progressivity or regressivity in state and local tax systems will be missed because only average tax rates are provided.

Fringe benefits

According to statistics published by the Employee Benefit Research Institute, in 2008 total fringe benefits equaled about 20.6 percent of the earnings of a typical worker.[88] The following fringe benefits were included in computing this figure: employer-provided health insurance, pensions, group life insurance, and employer payments into the funds that support workmen's compensation, unemployment compensation, and social security. The 20.6 percent figure will be multiplied by BOND's estimated impact on pre-tax earnings to determine BOND's impact on fringe benefits. This will only be done, however, for individuals who, as indicated by the survey of beneficiary, receive all of the fringe benefits included in deriving the 20.6 percent figure. Based on information also provided by the Employee Benefit Research Institute, a smaller figure will be used for individuals who do not receive some of these benefits.

---

[86]   See Congressional Budget Office (2009).

[87]   See Prante (2008) Table 1: State and Local Tax Burdens by Rank, Fiscal Year 2008.

[88]   See EBRI Databook on Employee Benefits (2005).

For example, the appropriate 2008 figure for workers who were not provided a pension from their employer was 16.2 percent.

Payroll taxes

Payroll taxes include Social Security taxes and taxes to support the Unemployment Insurance and Worker's Compensation systems. At the federal level, the Social Security retirement, disability and Medicare programs are financed both by employers and employees, while at the state level, unemployment insurance and worker's compensation are financed by payroll-tax payments that are paid solely by employers. However, studies have found that once payroll taxes have been in place for a number of years, as is the case in the United States, most of the employers' share is passed on to employees in the form of lower wages than they would otherwise be paid.[89] This implies, in turn, that BOND's impact on pre-tax earnings and fringe benefits (the first row in **Exhibit 7-1**) and BOND's impact on payroll taxes (the ninth row in **Exhibit 7-1**) should include the demonstration's impact on the employer's share of payroll taxes, as well as its impact on the employee's share.[90]

As indicated above, payroll taxes that are directly paid by employees support the Social Security retirement, disability and Medicare programs. To determine BOND's impact on these tax amounts, BOND's impact on pre-tax earnings will be multiplied by .0765, the fraction of pre-tax earnings that workers pay for Social Security taxes.[91]

According to U.S. Bureau of Labor Statistics data, in December 2009, 7.7 percent of total employee compensation (i.e., pre-tax earnings + fringe benefits + employer payroll taxes) consisted of payroll taxes paid by employers to support the social security, Medicaid, unemployment insurance, and workers' compensation systems.[92] Of that, 74 percent was paid into the SSA trust funds. These statistics are updated quarterly.

Using these statistics, the impact of BOND on employer payroll taxes can be computed by the following formula:

$$T = .077(E + F + T) \rightarrow T = .077(E + F) / (1 - .077).$$

where T is BOND's impact on employer payroll taxes, E is BOND's impact on pre-tax earnings exclusive of payroll taxes, and F is BOND's impact on fringe benefits. As previously indicated, E and F will be estimated as part of the impact analysis. Once T is estimated, it will be added to E to determine BOND's

---

[89]   For example, see the review of tax incidence studies in Hamermesh (1993).

[90]   To the extent that, later in life, beneficiaries get back some of what they pay in payroll taxes simply because they are paying more of the latter, the net transfer from beneficiaries to the trust funds over a lifetime is lower. This "payback" effect is both uncertain and deferred many years in the typical case, so will not be taken into account in the analysis.

[91]   It is assumed here that very few SSDI beneficiaries will be above the maximum earnings level that is subject to Social Security taxes.

[92]   See Bureau of Labor Statistics (2010).

impact on *total* pre-tax earnings. In addition, 74 percent of *T* will be allocated to taxes that accrue to the SSA trust funds and 26 percent to taxes that accrue to state governments.

Administrative costs of affected government transfer programs

The administrative costs of government benefit programs include eligibility determination, the development and maintenance of information systems, the issuance of payments, fraud control, staff training, and outreach to potential beneficiaries. The first of these cost components is the most important. Estimates of BOND's impact on the cost of administrating various transfer programs can be computed as the product of BOND's impact on payments under these programs and administrative costs per dollar of benefits under each program. Relying primarily on budget documents and expenditure reports that reported administrative costs as a separate line item, Isaacs (2008) has recently estimated administrative costs per dollar of benefits for several transfer programs, including those listed in **Exhibit 7-1**.[93] These estimates appear below:

Program	Administrative costs as a percentage of benefit payments
SSI	7.7%
Medicaid	5.1%
TANF	15.5%
SNAP	15.8%
EITC	1.5%

Because she focused on programs that target the poor, Isaacs did not estimate the administrative costs of several of the benefit programs listed in **Exhibit 7-1** including SSDI, Medicare, and Unemployment Insurance. Moreover, she estimated average administrative costs (essentially the ratio of administrative costs to total benefit payments) while marginal costs (the administrative costs resulting from paying an benefits to an additional person) are more appropriate for purposes of the benefit-cost analysis.[94] Thus, we will look for further studies of this sort between now and 2017 in order to obtain estimates for the remaining programs, to obtain estimates of marginal administrative costs if possible, and to obtain more recent estimates. We hope that such studies will exist, but if not, we will consider deriving our own estimates from program administrative data.

Value of output from volunteer work

If BOND has a positive impact on employment, it could have a negative impact on volunteer work among SSDI beneficiaries because they will have less time to participate in these activities. The value of this

---

[93] See Isaacs (2008).

[94] Although average and marginal administrative costs would be expected to differ for individuals already on a program's rolls whose benefits grow or shrink, they may be similar to one another for individuals who are added to the rolls of a program. Thus, under the latter circumstances, it may be feasible to use an estimate of the average cost of administration instead of the otherwise preferable marginal cost of administration.

volunteer work would then be lost to those persons who benefit from it—and potentially to the volunteers themselves, if intrinsic rewards are gained from being involved in charitable work.

Based on data from the survey of beneficiaries, the impact analysis will provide an estimate of BOND's impact on the number of hours of voluntary work during an "ordinary week." This estimate must be multiplied by the dollar value of an hour of a beneficiary's time as a volunteer in order to monetize it.

The obvious problem here is that the dollar value of a beneficiary's time as a volunteer is unknown. However, the beneficiary survey will collect information that can be used to determine average hourly wage (i.e., hourly pre-tax earnings plus the hourly value of fringe benefits) that employed beneficiaries receive from their employers. Presumably, these employed beneficiaries produce output that is worth at least as much as what employers pay them or they would not be employed. Thus, the average hourly wage of employed beneficiaries can serve as a proxy for their potential hourly dollar value in a volunteer job. However, it is likely to be an upper bound of the true value; because government and non-profit agencies that use volunteers pay nothing for these volunteers, the value of an hour of a beneficiary's time as a volunteer could be close to zero. Indeed, zero is a reasonable lower bound for the dollar value of an hour of a beneficiary's time as a volunteer.

For purposes of the main benefit-cost analysis, it will be assumed that the dollar value of a beneficiary's time as a volunteer equals the average hourly wage that employed beneficiaries receive from their employers. This value will be multiplied by the estimate of BOND's impact on the number of hours of voluntary work during an "ordinary week" and then multiplied by 13 to compute a quarterly estimate of BOND's impact on the monetary value of volunteer time. If this impact estimate is non-trivial in size, estimates for the remainder of the demonstration period will then be obtained by assuming that the time trend in BOND's impact on the monetary value of volunteer time is the opposite of the time trend in BOND's impact on quarterly employment. These quarterly estimates will be summed to compute BOND's total impact on the monetary value of volunteer time during the demonstration period. If the resulting estimate is non-trivial, we will conduct a sensitivity analysis of BOND's net benefits in the alternative scenario in which the dollar value of a beneficiary's time as a volunteer is zero.

Deadweight loss

As mentioned earlier, taxes result in losses of economic efficiency that economists refer to as deadweight loss. If taxes increase, deadweight loss also rises; but if they fall, deadweight loss also diminishes. BOND could cause taxes to either increase or decrease, depending on whether it results in net costs or net benefits to the government. Hence, its effect on deadweight loss must be estimated for purposes of the benefit-cost analysis. Doing this requires an estimate of the efficiency cost of one dollar more of taxes or of one dollar less, an estimate that is sometimes referred to as the "marginal excess tax burden." The value of this variable can be multiplied by the government's net benefits or net costs to determine the increase or decrease in deadweight loss resulting from BOND.

There are numerous empirical estimates of the value of the marginal excess tax burden, and the estimates vary for a number of reasons. For example, each type of tax has a different marginal excess tax burden. For purposes of simplicity, the benefit-cost analysis of BOND will assume that any increases or decreases in taxes that results from BOND would occur entirely within the individual income tax system.

Although various components of household income are taxed under the individual income tax system, the largest of these components by far is earnings obtained from employment. As a result, the major distortions caused by the individual income tax occur in labor markets. Because of this, estimates of the marginal excess tax burden of the income tax utilize estimates of labor supply elasticities—that is, the percentage change in hours of work or in employment that results from a one percent change in the wage rate that might result from a change in the tax rate. There are two types of estimates of labor supply elasticities: compensated elasticities and uncompensated elasticities. Compensated elasticities estimate the percentage change in labor supply that would occur if the loss in income that would result from a one percent reduction in the wage rate were exactly offset by an increase in income from some other source (e.g., social security payments). Uncompensated elasticities estimate the percentage change in labor supply that would occur if the loss in income that would result from a one percent reduction in the wage rate were not offset by an increase in come from another source.

Although most estimates of the marginal excess tax burden of the income tax are based on compensated labor supply elasticities, a few are based instead on uncompensated elasticities. It can be reasonably argued that unless a policy or program sufficiently benefits those who fund it through their taxes so that it essentially compensates them, a marginal excess tax burden that is based on uncompensated labor supply elasticities should be used in benefit-cost analysis.

In the case of BOND, uncompensated labor supply elasticities seem more appropriate than compensated elasticities. On the one hand, if BOND results in a net cost to the government, then most of any resulting increases in taxes are likely to be borne by taxpayers, not by SSDI beneficiaries, and such increases are unlikely to be compensated.[95] On the other hand, if BOND results in net government benefits, then most of any resulting decreases in taxes are likely to benefit taxpayers, not SSDI beneficiaries. Thus, we plan to use estimates of the excess tax burden that rely on estimates of uncompensated labor supply elasticities in conducting the BOND benefit-cost study.

Several estimates of the marginal excess tax burden (METB) that are based on uncompensated labor supply elasticities appear below:[96]

Study	Country	Estimated METB as a percentage of tax revenue	Mid-Point of METB Estimate
Dahlby (1994)	Canada.	9% - 38%	23.5%
Stuart (1984)	USA	43%	43.0%
Fullerton and Henderson (1989)	USA	6% - 17%	11.5%
Ballard et al. (1985)	USA	12% - 23%	17.5%
Campbell and Bond (1997)	Australia	I9.0%	19.0%

---

[95]   If BOND results in increased employment among beneficiaries and that is valued by taxpayers independently of any effect on taxes, then that would provide taxpayers with some compensation. Decreases in volunteer employment would work in the opposite direction.

[96]   These estimates, as well as the argument in favor of using estimates based on uncompensated labor supply elasticities, can be found in Fujiwara (2010).

The average of the five mid-point estimates is 23 percent, which implies that each dollar of additional individual income taxes collected results in 23 cents of efficiency loss due to labor supply adjustments. The average of the low estimates is 18 percent and the average of the high estimates is 28 percent. We tentatively plan to use 23 percent in our base benefit-cost analysis and to use 18 and 28 percent for sensitivity tests. However, we will also reexamine the relevant literature to see if more recent estimates can be found.

Effects on health and self-sufficiency and on the quality of life; possible monetization through the estimation of QALYs

There is considerable empirical evidence that employment has a positive effect on health.[97] Therefore, if BOND increases employment among SSDI beneficiaries, this should result in an improvement in health. If so, this will result in reductions in Medicaid and Medicaid expenditures, which as mentioned earlier will be estimated in the impact analysis and incorporated into the benefit-cost study.[98]

Health improvements will also, of course, be valued by those enjoying improved health. One approach that can be used to estimate the monetary value of the gain in health to those whose health improves as a result of BOND is through the estimation of the program's impact on quality-adjusted life-years (QALYs).Estimating QALYs require strong assumptions.[99] Thus, the resulting values are highly controversial and, as discussed below, should be used in benefit-cost analysis with great caution. Moreover, as discussed below, additional questions would need to be added to the BOND follow-up; hence, timings and a modification to the OMB package would need to be conducted in order to pursue this course. Thus, we will only do so should SSA so desire.

As the name suggests, QALYs provide estimates of the value of an additional year of life at varying levels of health status, or quality. For example, an additional year of life in perfect health might be valued at one, an additional year of life with back pain at 0.9, and an additional year of health when moderately disabled at 0.6. Various techniques have been used to assign QALYs for different health conditions, drawing from survey questions on health status. The various methods that have been used are described in Boardman et al. (2011).

Research has also put monetary values on the value of an average statistical life, where "statistical life" is defined by economists as how much people are willing to pay to reduce their risk of death. Boardman et al. (2011, pp. 408-412) survey the research and suggest using $5 million as a base value and values of $3 million to $7 million for sensitivity tests. The monetary value of a statistical life can, in turn, be used to compute the value of a full quality life-year by dividing it by an annuity factor that depends on the

---

[97] Early studies on this topic were subject to problems of reverse causality (i.e., health affecting employment status). However, more recent studies have addressed this issue by relying on longitudinal data or natural experiments. For example, several studies have examined the effects of factory closures on health, as laid off workers experience unemployment regardless of their initial health status. For a recent summary of available studies, see Fujihara (2010).

[98] Medicare and Medicaid could also decrease (with a lag) as BOND participants leave SSDI and/or SSI, or increase if BOND's offset keeps them on benefits—and hence health insurance—longer.

[99] See Boardman, et al. (2011).

expected number of remaining years of life and a discount rate. For example, an estimated statistical value of life of $5 million and a discount rate of 3.5 would imply that the value of a full-quality life-year for a person with a life expectancy of 40 years is $234,136. The value of a life-year can, in turn, be used to monetize QALYs by simply multiplying the two figures. For instance, if $234,136 is used as the value of a life-year for individual if he were in perfect health, but the individual is moderately disabled and has a QALY of 0.6, then the value of a life-year for that person is $140,482. As indicated by Boardman et al. (2011), like QALYs, estimating the value of a life-year also required strong assumptions and should therefore be used cautiously.

For purposes of the BOND benefit-cost analysis, and as explained below, we favor assigning QALYs to the program and control groups in the 36th month after random assignment. If this is possible (see below), then the impact on QALYs would then be estimated as the difference in QALYs between the two groups. If the impact on QALYs is non-trivial, we would then monetize this impact in the manner discussed above, using insurance tables to determine life expectancy for each observation in a representative subset of the full sample.[100] If the impact on QALYs is positive, then it would be assumed that the time pattern is similar to BOND's impact on employment because the policy's impact on employment is presumably the source of the impact on QALYs.

Because we will have only limited confidence in the resulting value, we will first estimate the total net benefits of BOND by excluding the estimate of monetized QALYs and then include the estimate to see how much difference it makes. We also plan to conduct sensitivity analyses of the estimate of monetized QALYs by using the alternative values for the worth of a life year noted above.

To assign QALYs to members of the BOND research sample we tentatively plan to use scales developed by John Brazier and his colleagues for purposes of constructing the SF-6F health index.[101] These scales are based on eleven questions, which as mentioned above, are not currently included in the BOND follow-up surveys.[102] The SF-6D consists of six multi-level dimensions (physical, role, social, pain, mental, and vitality), each of which has four to six levels of response. This allows 18,000 different health statuses to be defined. If SSDI beneficiaries in the BOND Stage 1 and Stage 2 survey samples complete these questions, their health status will be defined and they will be assigned QALYs on the basis of preference weights that are contained in the SF-6D software and briefly described in the following paragraph.

The preference weights contained in the SF-6D software were obtained from interviews of a sample of the general population of the United Kingdom. Although one can question using the preferences of the U.K. population to determine QALYs for U.S. residence, the SF-6D has previously been used for that purpose.[103] Moreover, the U.S. National Institute of Health is currently considering a proposal to obtain

---

[100]   We will attempt to find life expectancy tables that are specific to people with disabilities. However, it is likely that such tables do not exist.

[101]   See Brazier et al. (in press). A brief description of the SF-6D can be found at http://www.shef.ac.uk/scharr/sections/heds/mvh/sf-6d

[102]   For example, individuals are asked the following question: "In general would you say your heath is (I) excellent, (2) very good, (3) good, (4) fair or (5) poor."

[103]   See O'Hagan et al. (2007).

preference weights for a sample of the general population of the U.S.[104] If it is funded, then these preference weights for the US population should be available in time for use in the benefit-cost analysis of BOND. Using the SF-6D requires that a license be obtained. However, the license is issued free of charge for federally-funded research such as BOND.[105]

The preference weights are based on the standard gamble method.[106] In brief, sampled individuals were asked to place relative values on a selection of alternative health statuses. Brazier and his colleagues then estimated a regression model with the resulting preference weights as the dependent variable and the various levels on the six dimensions as the explanatory variables. The coefficients from this regression can be used to assign QALYs to the various health statuses.

Loss of non-market time

If BOND causes increased work hours, the lost nonmarket time that accompanies increases in work hours has value that needs to be counted as a cost when assessing the merits of that program. The circumstances under which lost nonmarket time would occur under BOND are modeled formally in **Appendix C**.

Greenberg (1997) developed a methodology that he used to incorporate lost nonmarket time into benefit-cost analyses of welfare-to-work programs.[107] Greenberg and Robins (2008) then adopted this methodology to a benefit-cost analysis of the Self-Sufficiency Project (SSP), a financial incentive program that was tested on a pilot basis on Canadian welfare recipients,[108] SSP was similar to BOND in certain respects, and, using the model detailed in the **Appendix C**, we plan to adopt Greenberg and Robins' methods so that they can be used for purposes of the BOND benefit-cost analysis.

Greenberg and Robins' methodology is described in considerable detail in their published article, and in the interest of space will not be repeated in detail here. As suggested by **Appendix C**, applying the methodology will require information about the hours that would be worked in the absence of the BOND, the hours worked in the presence of BOND, and the net wage received under BOND by those who respond to the programs incentives by increasing their hours. This information will be obtained from the survey data on the program and control groups. In addition, assumptions must be made about the compensated wage elasticity; the shape of the labor supply curve for SSDI beneficiaries; whether SSDI beneficiaries work the number of hours they wish to work, both before and after BOND; and the lowest hourly wage rate at which SSDI beneficiaries would be willing to work at positive number of hours (in the economics literature, this is often referred to as "the reservation wage").

We plan to subject all these assumptions to sensitivity tests. Greenberg (1997) and Greenberg and Robins (2008) demonstrate that the findings are likely to be especially sensitive to the choice of the reservation wage. It is possible that the reservation wage will be quite low for many SSDI beneficiaries because they

---

[104]   E-mail correspondence with John Brazier.

[105]   E-mail correspondence with John Brazier.

[106]   For an explanation of the standard gamble method, see pp. 479-480 of Boardman et al.

[107]   See Greenberg (1997).

[108]   See Greenberg and Robins (2008).

will desire employment to overcome feelings of being unproductive and social isolation, but for other beneficiaries it may be high because they have to overcome their disability in order to work. In any event, it is unlikely to be below zero because SSDI beneficiaries can always work at voluntary jobs. By definition, anyone who responds to the BOND work incentive must also have a reservation wage below their market wage (that is, the wage they can obtain from employers). Thus, their reservation wage must fall between zero and their market wage, and we will conduct sensitivity tests that allow the reservation wage to vary within this range.

7.2.3   Estimating Operating Costs of Employment Assistance Programs

BOND subjects will generate social costs when they utilize various forms of employment assistance. The differences among the cost of the services used by the different randomized groups need to be taken into account when computing the overall costs and benefits of the BOND interventions. We expect BOND subjects to incur employment assistance costs in four major areas:

- costs of administering the benefit offset (the T1, T21, and T22 groups only);

- costs of work incentives counseling;

- Ticket to Work costs paid by SSA; and

- State Vocational Rehabilitation Agency (SVRA) costs.

The last two costs will arise for all the research groups, but may differ between T1 and C1 groups because of the benefit offset or between T21, T22, and/or C2 groups because of the benefit offset or the provision of EWIC.

The first three of the cost components listed above will be borne by the DI Trust Fund. As shown in **Exhibit 7.1**, whether BOND produces net gains for the trust fund depends on whether BOND also increases payroll taxes paid into the trust funds and reduces SSDI benefits paid out and, if it does, on whether these amounts are larger or smaller than the total costs of the first three components. As mentioned previously, the size of increases in payroll taxes and reductions in SSDI benefits will depend, in turn, on the extent to which BOND induces entry onto the SSDI rolls by workers who are not current beneficiaries. As discussed in Section 7.2.4, while the effects of induced entry will not be measured as part of the BOND impact analysis, they will be considered in assessing findings from the benefit-cost study.

Costs of Administering the Benefit Offset

Administration of the benefit offset involves two primary functions: gathering annual earnings estimates from beneficiaries and calculating each month's SSDI benefit amount reflective of those earnings and—for the treatment groups—of the benefit offset rules. The BOND implementation and evaluation contractor will gather these estimates. Hence, the benefit-cost analysis team can consult the contractor's expenditure records to learn how much is spent on earnings data-gathering for the purpose of benefit administration per treatment group member per year.

The costs of computing the SSDI benefit amount under the offset will be incurred by SSA. These can be handled in one of two ways. Under the first approach, the benefit-cost analysis team would work with

appropriate SSA staff to obtain dollar estimates of benefit calculation costs per beneficiary per month. Alternatively, SSA may judge that (following some start-up phase) the costs of computing benefit amounts with the offset are not appreciably higher than the costs of computing benefit amounts without the offset, so no cost figure is needed (because costs would be the same with and without BOND).

Costs of WIC and EWIC

The costs of WIC services to the T21 group should not differ appreciably from WIPA counseling services to the C2 group. It follows that counseling service costs need not be considered in the T21-to-C2 comparison. These costs for EWIC will be central to the T22-to-T21 comparison, however, because the two samples differ only in their receipt of EWIC versus WIC services.

Because the BOND contractor will procure and pay for WIC services to T21 and EWIC services to T22, total expenditures over the life of the project on each kind of counseling will be discernable from contractor accounting records. Per beneficiary costs will be obtained directly from these figures, by dividing the WIC total by 4,800 and the EWIC total by 3,000—the respective sample sizes of the T21 and T22 samples. The benefit-cost analysis will count the difference between these two per-person figures as the incremental cost of EWIC, presuming that EWIC is the higher cost version of counseling.

Ticket to Work Costs

SSA administrative records will indicate which beneficiaries have their TTW "tickets" assigned to an EN. These rates will likely vary among the different research samples: T1, C1, T21, T22, and C2. We will multiply each group's "ticket" assignment rate by the average costs of TTW services per assigned ticket, taken from the Ticket to Work evaluation, to approximate total TTW costs for each group.

This procedure assumes that, while the use of "tickets" may vary, TTW expenditures per user do not differ among the research groups. We think that this is a reasonable first approximation. Unfortunately, no data exist on EN expenditures for individual beneficiaries (short of accessing MIS accounting records of all ENs serving beneficiaries in the overall evaluation pool of more than one million). Thus, the assumption cannot be tested. The assumption can, however, be varied to see how sensitive the bottom-line benefit-cost findings are to different cost-per-beneficiary amounts on either side of the overall TTW average.

State Vocational Rehabilitation Agency Costs

A similar strategy as that used to determine TTW costs will be used for SVRA costs: measure the participation rate for each random assignment group and then assume the average participant in each group uses the same dollar value of services as in the other groups. The evaluation will access SVRA administrative records to determine which sample members use services from those agencies. We will multiply each group's SVRA participation rate by a figure taken from the literature characterizing average SVRA spending per participant. In doing this, we will use a figure specific to SSDI beneficiaries participating in SVRA if one can be found.

This procedure assumes that, while participation in SVRA may vary, SVRA expenditures per participant do not differ among the research groups. We think that this is a reasonable first approximation. While existing administrative data will report the types of services received from SVRA for each sample

member, no data exist on service costs for individual beneficiaries (short of accessing accounting records for all 50 state vocational rehabilitation agencies and computing their cost per unit of service for each service type). Thus, the assumption cannot be tested. It can, however, be varied to see how sensitive the bottom-line benefit-cost findings are to different cost-per-beneficiary amounts on either side of the overall SVRA average. The precise range of values to be examined in this (and other) sensitivity analyses will be stipulated in advance and published.

7.2.4　Unmeasured Benefits and Costs

BOND *may* have two types of effects that we do not plan to estimate as part of the evaluation. Both types of effects could result if BOND increases employment among SSDI beneficiaries. The first could result if taxpayers are pleased by the increase in work. The second involves general equilibrium effects. For instance, a general equilibrium effect would occur if SSDI beneficiaries take jobs that others would have had in the absence of BOND. These effects are discussed next.

Value others place on increasing work among SSDI beneficiaries

Many taxpayers who pay for SSDI and SSI benefits may prefer that recipients of these transfers work. To the extent that BOND increases work among SSDI beneficiaries *and* taxpayers are aware of this and would be willing to pay for this outcome, this is another benefit of BOND. To our knowledge, however, no attempt has ever been made to elicit taxpayers' willingness to pay for the substitution of work for transfer payments among transfer recipients. Thus, one can currently do little more than conjecture about the size of this benefit.

One approach that could be used to obtain information on this topic is contingent valuation, which utilizes surveys to attempt to measure willingness to pay for goods not exchanged in markets. However, conducting a contingent valuation survey among taxpayers would be expensive, and we do not plan to conduct one as part of the BOND evaluation. Thus, in reporting the benefit-cost findings, we will simply acknowledge the possibility that taxpayers may value any effects that BOND has on the work effort of SSDI and SSDI beneficiaries as a potential benefit of the program.

General equilibrium effects of increasing work among SSDI beneficiaries

If BOND were rolled out nationally, it might have effects on the well-being of those who are not currently SSDI beneficiaries and, because of this, on the economy. Such effects which are often referred to as "general equilibrium effects," include displacement effects, equilibrium wage effects, and induced entry.[109] These effects are less likely to occur in a demonstration program than in a full-scale national program. Each of these effects is discussed in this subsection.

Displacement Effects. If BOND increases the number of SSDI beneficiaries seeking employment or their intensity of job search, it may increase competition for available jobs. Hence, SSDI beneficiaries may end up in jobs that would otherwise have been held by other workers. In effect, they displace other workers. If these displaced workers become unemployed or accept lower-wage jobs, their earnings are obviously less

---

[109]　For a review of studies of these effects, see Greenberg et al. (2010).

than they otherwise would be and the benefits of BOND to society as a whole will therefore be less than otherwise.

The importance of displacement effects caused by BOND will partially depend on the number of existing job vacancies. The fewer the number of job vacancies, the more difficult it will be for those who are displaced to find jobs that are alternatives to those taken by SSDI beneficiaries. Thus, the magnitude of displacement effect is likely to reflect the state of the relevant local labor markets. If a local labor market in which SSDI beneficiaries work is tight (i.e. the ratio of vacancies to job seekers is high), then alternative job opportunities are likely to be available to those who are displaced; but if it is loose, then the cost of displacement to those affected could be substantial. However, even if there is a substantial displacement effect, it is unlikely to be permanent. If the economy is expanding, displacement effects should diminish over time, as job opportunities become open and absorb those who were substituted against. Moreover, macroeconomic policy may be able to help keep aggregate unemployment rates low, making it easier for displaced ineligibles to find alternative job opportunities. Thus, the displacement effect is likely to be more important in the short-run than in the long-run.

Little is known about potential displacement effects from programs such as BOND. Nonetheless, there has been one recent study of displacement caused by a program in the United Kingdom that provided fiscal incentives and job counseling to persons receiving disability payments.[110] The study used econometric tools and a plausible methodological approach to estimate the magnitude of the program's displacement effect. The findings are consistent with the possibility of a small short-run effect in some geographic areas.

Because there are so few studies of displacement resulting from programs similar to BOND, it is difficult to draw any firm conclusions about displacement that might result from BOND. Thus, we do not plan to adjust the BOND benefit-cost findings for displacement. However, in discussing the benefit-cost findings we will assess the possibility of displacement, putting particular emphasis on the state of the economy during the time the demonstration is run.

Equilibrium wage effects. If BOND causes hours of work to increase among SSDI beneficiaries, then the resulting increase in labor supply will tend to put downward pressure on the equilibrium wage rates within the labor markets in which beneficiaries work. Thus, other workers in the same labor markets could receive lower wages than otherwise would be the case. Notice that if wage rates are lower than they would be without BOND, then this will tend to mitigate any displacement effects resulting from the program because, at lower wages, employers will be more willing to hire displaced workers.

There is virtually no empirical information about equilibrium wage effects resulting from programs like BOND. Because so little is known about the equilibrium wage effects of programs like BOND and, in any event, BOND is unlikely to bring about large equilibrium wage effects,[111] we will not attempt to take account of such effects in the benefit-cost study.

---

[110]   See Adam et al. (2008).

[111]   For BOND to actually result in wage rates that are much lower than they otherwise would be three conditions much hold: (1) the minimum wage must not constrain downward movements in wage rates; (2) persons who qualify for SSDI must account for a fairly large share of the workers in the relevant labor markets; and (3) BOND's effects on employment must be fairly large. It seems unlikely that BOND will bring about large

---

Induced entry. Some persons with disabilities who could qualify for SSDI benefits currently do not apply. It is possible that the more favorable treatment of earnings provided by the offset, once on SSDI, will make the program look more attractive to some of these people and cause them to apply and begin receiving benefits.[112] This "induced entry" will increase the total amount of disability payments. Moreover, it is likely to increase over time in the case of a nationally rolled out version of BOND, as the features of the program become better known.

Because these persons are not currently receiving SSDI, they will not be included in the BOND research sample. Thus, the induced entry resulting from BOND will not be estimated as part of the impact analysis nor included in the benefit-cost analysis. However, SSA plans to assess the likely extent of induced entry through separate non-experimental research. Based on findings from this research, the implications of omitting induced entry from the benefit-cost analysis will be discussed.

7.3.   Conducting the Analysis

Once BOND's benefits and costs are valued, a number of steps remain in order to complete the benefit-cost analysis. The initial focus of this effort will be on the central perspective of the SSA trust funds. Here, it is necessary to combine potentially reduced SSDI benefits and administrative costs and higher expected payroll tax collections with higher costs for BOND implementation, EWIC services, and Ticket to Work payments. It will be similarly necessary to account for benefit and costs elements accruing to each of the other segments of society: SSDI beneficiaries, other portions of government, and society as a whole. This section describes the steps involved in each such appraisal and indicates how each of these steps will be accomplished.

7.3.1   The Key Steps Once the Benefits and Cost Are Valued

The key steps needed to complete the benefit-cost analysis after the benefits and costs are valued are listed below:

- Assemble the information produced by the impact analysis, the cost study, and other relevant analyses

- Adjust for inflation

- Extrapolate the benefits and costs into the post-demonstration period

- From each perspective, compute the net present values of each benefit and cost component

- Sum the benefits and costs to obtain the monetized net present value from each perspective

- Use distributional weighting to assess the effect of the monetized benefits and costs on the income distribution

---

equilibrium wage effects. At least to some degree, the minimum wage probably constrains reductions in equilibrium wages. More importantly, BOND's target group is narrow. Thus, members of the target group will account for only a fairly small proportion of the total supply population in most labor markets. Finally, BOND's impact on labor supply is likely to be modest.

[112] In terms of Exhibit C-1 in **Appendix C**, these workers currently work between h_G and h_T hours.

- Conduct a sensitivity analysis

We next describe what each step involves and how each will be accomplished.

Assemble the information produced by the impact analysis, the cost study, and other relevant analyses

As discussed in the previous section, many of the benefit and cost estimates will be acquired from the impact analysis, but others will be obtained from a variety of other sources. These will be assembled in a spreadsheet modeled after **Exhibit 7-1**.

In doing this, it will be important to assure that each benefit and cost component is estimated for all five years of the demonstration period. Some benefit and cost components, such as impacts on earnings, SSDI and SSI benefits, and Medicare and Medicaid payments, will be estimated for each month or quarter of the demonstration, and these estimates can simply be summed. Others, such as impacts on UI, TANF, and SNAP benefits and work-related expenses will be estimated at a single point in time (approximately, 36 months after random assignment). As discussed in Section 7.2.1, these impacts will be extrapolated to the rest of demonstration period by first determining the time trends for those impacts that are estimated monthly or quarterly and then basing the extrapolation on these observed time trends. For example, it will be assumed that the time trend for the impact on work-related expenses will be similar to the time trend for the impact on employment. Once the extrapolation work is completed, it will only be necessary to sum the estimates across time.

Adjust for inflation

Because many of the benefits and costs resulting from BOND (e.g., impacts on earnings and Medicare and Medicaid payments) will accrue at different points in time, they must be adjusted for inflation; otherwise, they will not be comparable to one another. In conducting the BOND benefit-cost analysis, we plan to convert all monetary values to 2016 dollars, the year prior to completing the analysis, by using the Consumer Price Index (CPI).Because medical costs have tended to rise faster than other costs in recent years, the CPI index for health costs will be used in adjusting BOND's impacts on Medicare and Medicaid payments from their original years' price levels to 2016 dollars. The remaining values will be converted to 2016 dollars using the CPI index for "all items less medical care."

Two recent studies have found that the CPI is overstated by a little less than 1 percent per year, although some other analysts have argued that the CPI actually understates inflation.[113] Thus, for purposes of sensitivity analysis, we will convert the impact estimates to 2016 dollars under the assumption that the published values in CPI index are overstated by 1 percent per year.

Extrapolate the benefits and costs into the post-demonstration period

The benefit-cost analysis will be extrapolated 10 years beyond the five-year BOND demonstration period, for a total analysis period of 15 years. Extrapolation is important because without it potentially important future benefits and costs will be omitted from the analysis. The extrapolation will be accomplished by

---

[113]   For a review of the issues and a summary of the literature, see Johnson, Reed, and Steward. (2006).

using regression analysis to model trends in earnings impacts and other impacts over the demonstration period and then projecting these trends beyond this period to reach 15 years. In doing this, we will investigate the possibility of a quadratic relation, which is consistent with the time trend of impacts found in meta-analyses of evaluations of training and welfare-to-work programs.[114]

Extrapolation is always somewhat problematic because, by definition, future time trends cannot be observed and thus assumptions must be made about them. Hence, in addition to conducting the benefit-cost analysis over the 15-year period, we will also estimate net benefits for the 5-year demonstration period alone. This will allow us to determine how sensitive our findings are to including the extrapolation period.

From each perspective, compute the net present values of each benefit and cost component

Because benefits and costs accrue at different points in time and because amounts that will be received or expended later are valued less than similar amounts that will be received or expended sooner, it is standard practice in benefit-cost analysis to use a discount rate to convert all streams of benefits, costs, and transfers to their present value. Otherwise, values that accrue at different points in time cannot be appropriately compared. Computing present values is readily accomplished by using a formula that is built into standard computer spreadsheet software.

For purposes of estimating present values in the BOND benefit-cost analysis, we plan to use a base-case discount rate of 2.9 percent, which is the intermediate discount rate presently used by Social Security actuaries.[115] However, the appropriate discount rate to use in discounting in benefit-cost analyses of social program is contentious (for example, see Boardman et al., 2011). Based on an extensive review of the literature on discounting for benefit-cost purposes, Boardman et al. (2011) conclude that the appropriate discount rate is between 1 percent and 5 percent and suggest using a value of 3.5 percent, which is close to the discount rate used by Social Security actuaries. Thus, for purposes of sensitivity analysis, we plan to use values of 1 percent as a lower bound and 5 percent as an upper bound.[116]

Sum the benefits and costs to obtain the monetized net present value from each perspective

This step is entirely mechanical and can be readily accomplished once the previous steps are completed. It simply involves summing each of the columns in **Exhibit 7-1** once the pluses and minuses are replaced with dollar values. A positive net present value from a particular perspective would indicate that BOND is cost-beneficial from that perspective.

---

[114] See Greenberg et al. (2004a) and Greenberg et al. (2004b).

[115] See OASDI Trustees Report: Section II.C, Assumptions, Table II.C1. A. (2009).

[116] Social Security actuaries use lower and upper bounds of 2.1 percent and 3.6 percent, respectively, in making "long-range (75 year) projections. However, we will be discounting over only 15 years and our base-case results would not be very sensitive to these discount rates, which do not vary very much from the 2.9 rate that we plan to use for our base-case estimates.

Use distributional weighting to assess the effect of the monetized benefits and costs on the income distribution

Because SSDI beneficiaries have lower incomes than the average taxpayer, they are likely to value a given change in income more highly. A considerable literature exists suggesting that this difference in marginal utility should be dealt with in benefit-cost analysis by giving each dollar of gain or loss by relatively low-income individuals' greater weight than each dollar of gain or loss by relatively high-income persons (see Boardman et al. 2011, Chapter 19). This issue will be especially important in the BOND benefit-cost analysis *if* the findings indicate that the program results in net benefits for beneficiaries and net costs to the government (and, hence, taxpayers) *and,* when unweighted, the former are smaller than the latter so that it appears that society as a whole is worst off. In such a case, the apparent net loss to society could turn positive, if the dollars of gains by beneficiaries are given more weight than the dollars of losses by taxpayers. It would also be important if the opposite conditions existed. In this case, the apparent positive total net benefits accruing to society could turn negative if the losses by beneficiaries were given more weight than the gains by taxpayers. Unfortunately, however, the appropriate weights to use are not clear.

Although several alternative approaches might be used to determine these weights (see Boardman et al. 2011, Chapter 19), we plan to use a simple, straight-forward method that involves computing "breakeven distribution weights." For BOND, this would entail first setting the weight for the government (i.e., taxpayers) equal to 1 and then computing the weight for SSDI beneficiaries that would make the total benefit to society across all sectors exactly 0. This is accomplished by setting the beneficiary weight equal to the estimated net present value for the government divided by the estimated net present value for beneficiaries. Thus, for example, if BOND imposed a net cost on taxpayers equal to twice the net benefit received by SSDI beneficiaries, the breakeven distribution weight would equal 2. This breakeven distribution weight implies that the more advantaged taxpayer group paid $2 for each dollar of gain for the less advantaged beneficiary group. Policy makers would have to judge whether dollars of benefits received by beneficiaries should be given a higher or lower weight than 2 relative to taxpayer dollars. We plan to compute a breakeven distribution weight if it turns out that the net benefit of BOND for society are negative when they are not weighted, but the unweighted net benefits for beneficiaries are positive; or vice versa.

Conduct a sensitivity analysis

As discussed earlier, there will be considerable uncertainty about the values of certain benefits and costs that are estimated and, as a result, about total estimated net benefits. This uncertainty has two sources: (1) problematic assumptions needed to estimate certain benefits and cost; (2) sampling error. As discussed below, the uncertainty from both sources will be addressed through sensitivity analyses.

Uncertainty resulting from assumptions made in estimating some benefits and costs. These benefits and costs include the value of output from volunteer work, BOND's effect on deadweight loss, the value of changes in health status, and the value of losses of non-market time. For these benefit components, we will use the values that in our judgment provide the best estimate of each in making base-case estimates of the net gains (or losses) resulting from BOND. However, in the earlier discussion of each benefit and cost component about which there is considerable uncertainty, we mentioned ways of computing alternative plausible values. We will use these alternative values in sensitivity analyses. For example, if it

turns out that the initial estimate of total net benefits from the societal perspective is positive, we will see if the estimate turns negative when less favorable alternative values are substituted for those used in the initial appraisal. In addition, we will examine whether the estimate of total net benefits remains positive when benefits and costs are not projected into the post-demonstration period and, thus, only those benefits and costs that are observed during the five-year evaluation period are considered. Finally, if estimated total net benefits for SSDI beneficiaries is positive, but estimated total social net benefits are negative, we will explore whether the use of plausible distributional weights turn the negative social net benefits positive.

Uncertainty due to sampling error. An especially useful form of sensitivity analysis, one that we plan to undertake, relies on a Monte Carlo approach.[117] This approach differs fundamentally from the approach outlined in the previous paragraph because it addresses sampling variability that causes virtually all impact estimates, even those that are statistically significant, to be subject to some uncertainty. This uncertainty is implied by their standard errors—the larger the standard error relative to the point estimate, the greater the uncertainty. In the Monte Carlo approach, point estimates of benefits and costs about which there is uncertainty due to sampling variability are replaced with random draws from an appropriate range many times in order to generate many estimates of net benefits. For example, the estimates of BOND's impact on earnings and SSDI and SSI payments, as well as the other impact estimates, will be replaced by random draws within the range implied by the 95 percent confidence intervals of these estimates.[118] Total net benefits will then be computed for a very large number of draws, probably over a thousand for each impact estimate. The resulting estimates of total net benefits will then be used to compute the mean value of total net benefits, which should be very similar to the original estimate of total net benefits. The standard error of this mean will indicate the uncertainty concerning the estimate of net benefits, much as the standard error of an individual impact estimate indicates the uncertainty pertaining to that estimate. The multiple estimates of total net benefits from the random draws will also be used to generate a histogram, which will display the implied distribution of total net benefits. The fraction of net benefit estimates that are negative provides an estimate of the probability that the net benefits of BOND are negative.

7.4   Schedule and Format for Presenting the Results

Exhibit 7-2 presents a timeline for the data collection and reporting that serve as inputs to the benefit-cost analysis. As with earlier Gantt charts, it begins by grounding these evaluation activities in the major milestones of the demonstration's implementation phase (top panel). The implementation milestones—particularly the intervals of random assignment—determine when data can be collected with which to measure BOND benefits and costs (middle panel): the Stage 2 12- and 36-month follow-up surveys, the Stage 1 36-month follow-up survey, and the continuous flow of administrative data. Following completion of the 36-month surveys in 2015, impact analysis will be conducted as described in Chapter Six.

---

[117]   For greater detail than is provided here about this approach and an illustration, see Boardman et al. (2011), pp. 183-187.

[118]   It is quite likely that some of the impacts are correlated. For example, a positive increase in earnings due to BOND may be accompanied by a negative impact on SSDI benefits. Such correlations will be incorporated into account in the Monte Carlo analysis by drawing from a joint distribution of the parameters. In doing this, we will estimate all of the regression equations as a system in order to obtain the correct variance-covariance matrix.

The benefit-cost findings will be derived from the impact analysis results and additional cost analyses described above, which will be conducted in 2016. A benefit-cost chapter will then appear in the Final Report of the BOND evaluation, submitted in draft in September 2017. The chapter will begin with a general discussion of the data sources and analytical approach used to value the benefits and costs. This discussion will be written so that it is understandable by non-technical readers. Details about how each individual benefit and costs were computed, such as the details that appear in this document, will be placed in a technical appendix.

Exhibit 7-2: Timeline for Developing and Reporting Benefit-Cost Analysis Findings

	Year								
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Implementation Milestones									
Site preparation	▬	▬							
Operate local BOND site offices		▬	▬	▬					
Pilot solicitation and random assignment (Stage 2)			▬						
Pilot operations (stage 2)			▬						
Stage 1 random assignment		▬	▬						
Stage 1 outreach			▬	▬					
Stage 2 main solicitation			▬	▬					
Stage 2 random assignment			▬	▬					
Offset and EWIC in place			▬	▬	▬	▬	▬	▬	▬
Data Collection									
Site Visits			-	-	- -	-	-		
Stage 2 Baseline Survey			▬	▬					
Stage 2 12 Month Survey				▬	▬				
Stage 2 36 Month Survey						▬	▬		
Stage 1 36 Month Survey						▬	▬		
Administrative Data*			▬	▬	▬	▬	▬	▬	
Reports									
Final report on participation, impacts, and benefits and costs									▬
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**

*   Administrative data used for the benefit-cost study includes BODS, SSA Earnings data, TRF, Medicare data, Medicaid data, and RSA

All the benefits and costs that can be valued in dollars will be reported in tables similar to the accounting framework in **Exhibit 7-1** above. **Exhibit 7-3** presents one such table, for the benefit-cost analysis of the Stage 1 benefit offset; similar tables will be used for the different Stage 2 analyses. The benefits and costs from each perspective will be summed so that total net benefits (or costs) from each perspective will appear at the bottom of each column. There will be separate discussions of the findings from each perspective: that of the beneficiaries, the government—the SSA Trust Funds, other federal government, state and local government—and society as a whole. This entire array of results will be presented for each of the four benefit-cost comparisons of interest:

- The benefit offset at Stage 1, compared to current law;

- The benefit offset at Stage 2, compared to current law;

- The benefit offset plus EWIC at Stage 2, compared to current law; and

- The benefit offset plus EWIC at Stage 2, compared to the benefit offset only.

Exhibit 7-3.   Benefits and Costs of the Stage 1 Benefit Offset, by Accounting Perspective (Table Shell)

| Benefit or Cost Component | Beneficiaries | Federal Government | | State & Local Government | All of Society |
| | | Other | | | |
		SSA Trust Funds	Other		
Pre-tax earnings Fringe benefits from work	$____	$ ___	$ ___	$ ___	$ ___
SSDI benefits SSI benefits					
SSDI administrative costs SSI administrative costs					
Medicare/Medicaid payments					
Medicare and Medicaid administrative costs					
Payroll taxes					
Income and sales taxes					
UI benefits					
UI administrative costs					
TANF payments					
TANF administrative costs					
SNAP (food stamps) benefits					
SNAP administrative costs					
BOND administrative costs					
Cost of EWIC					
Cost of Ticket-to-Work					
State VR service costs					
Work-related expenses (e.g., child care, transportation, clothing)					
Output from volunteer work					
Effects on health and self-sufficiency					
Quality of life					
Non-market time					
Value placed by public on increasing work among SSDI recipients					
Deadweight loss					
Labor market effects on third parties					

Net Benefits (+) / Costs (-)	Σ $	Σ $	Σ $	Σ $	Σ $

As noted earlier, BOND may result in certain general equilibrium effects. In addition, it may increase work among SSDI beneficiaries, and this may be valued by taxpayers. These potential benefits and costs will remain unmeasured but in presenting the benefit-cost findings, they will be noted as possible additional effects of BOND when discussing measured benefits and costs.

Chapter Eight.   Cross-Cutting Analyses

The analyses described in the preceding four chapters will inform SSA about a number of vital aspects of the benefit offset approach, answering the following questions:

- How was BOND implemented, what challenges arose, and how were they met? (Addressed by the process analysis in Chapter Four.)

- Which beneficiaries participated in BOND and subsequently engaged in work-related activities that lie along the path to benefit exit? (Participation analysis in Chapter Five.)

- What impact did the demonstration have on beneficiaries' earnings, benefits, and related outcomes? (Impact analysis in Chapter Six.)

- Was the intervention cost-effective for SSA? For society as a whole? (Benefit-cost analysis in Chapter Seven.)

What these four research components will not tell us, taken separately, is:

- What *connects* the outcomes observed in BOND—i.e., what links BOND's successes and struggles across the different process, participation, impact, and benefit-cost domains?

- Is there a *best* program design among the different models tested by the T1, T21, and T22 treatment groups, when the evidence from all four study components is considered as a whole?

- How might *greater* success have been achieved, through alternative intervention design, implementation, and/or beneficiary targeting?

The final evaluation report will include a cross-cutting chapter to address these questions, and any others that arise over the course of the evaluation that require an integrative examination of more than one research component. The cross-cutting chapter will synthesize and integrate previously derived findings from the four study components not previously combined. It will also add new cross-cutting analyses not previously conducted.

We describe the chapter here as currently envisioned, as well as the analyses on which it will be based. An outline for the chapter appears in **Exhibit 8-1**. The tables listed in the outline are in some instances illustrated in the text (see **Exhibits 8-2**, **8-3**, and **8-4**). The ensuing discussion of analytic methods is organized around the different research questions in the outline.

Exhibit 8-1.   **Proposed Outline for the Cross-Cutting Chapter of the Final Report**

A. Research Questions to Be Addressed

B. What Connects the Outcomes Observed in BOND?

- Summary of outcome findings from the different evaluation components
  exhibit: Major Evaluation Findings, by Study Component and Intervention

- Insights from the process analysis concerning participation patterns
  exhibit: Cross Site Comparisons of Process and Participation Findings

- The potential role of context—programmatic and economic—in influencing impact results
  exhibit: Correlates of Impact Magnitude

- How impacts vary with beneficiaries' participation patterns
  exhibit: Relationship between Effects on Experiences and Effects on Outcomes

- Robustness of benefit-cost conclusions to variations in impact
  exhibits: Net Benefits with and without Statistically Insignificant Impacts Net Benefits for Subgroups

C. Is There a Best Program Design among Those Tested?

- Different modes of outreach and responses to outreach
  exhibit: Outreach Response Rates by Program Model

- Work-focused activities: steps, intensity, labor market outcomes
  exhibit: Progress through the Demonstration by Program Model

- Impacts—what interventions affected which outcomes?
  exhibit: Outcomes Significantly Impacted by each Program Model

- Best return-on-investment for SSA and other sectors of society
  exhibit: Net Benefits per Dollar Spent on each Program Model

D. How Might Greater Success Have Been Achieved

- Overcoming "frictions" that may have inhibited success
  exhibit: Prevalence Rates of Potential Barriers to Work and Benefit Reduction

- Using subgroup findings to guide intervention refinements
  exhibit: Summary of Subgroup Findings

8.1   What Connects the Outcomes Observed in BOND?

The cross-cutting chapter will begin by summarizing key findings from the four separate evaluation components in a table structured like **Exhibit 8-2**. This will set the stage for examining factors that link the demonstration's primary outcomes across the study components. The analysis will have four components. The first will draw insights from the process analysis about observed participation patterns. The second will examine relationships between local contextual factors and local results. The third will considere how benficiaries' participation experiences relate to BOND's impact on beneficiary ourcomes. The fouth will analyze the robustness of the cost-benefit estimates to variation in impacts.

Exhibit 8-2.   Major Evaluation Findings, by Study Component and Intervention (Tables Shell)

	Target Population and Intervention		
	Full Caseload	SSDI-Only Volunteers	
	Benefit Offset (T1)	Benefit Offset (T21)	Benefit Offset +EWIC(T22)
Process Analysis	[finding] ●	● ● ●	● ● ●
Participation Analysis	● ● ●	● ●	● ●
Impact Analysis	● ● ●	● ● ● ●	● ● ●
Benefit-Cost Analysis	● ●	●	● ●

8.1.1   Insights from the process analysis concerning participation patterns

A key cross cutting question not covered in the earlier chapters asks whether variations in service implementation across sites influence participation patterns of treatment subjects. While BOND is designed to be implemented uniformly across the ten sites, differences might arise due to differences in staffing, characteristics of the caseload, the service environment, and/or economic conditions.

Exhibit 8-3 illustrates the approach for conducting a cross-cutting analysis of process and participation findings at the site level. The BOND team will draw on key indicators from the process analysis to assess the implementation of the offset (e.g., number of days to adjust benefits under the offset) and WIC/EWIC services across sites (e.g., number of hours of service delivery) for the different BOND treatment groups. An additional category of rows will be added to summarize any issues of the service environment that might have affected implementation. The information in these rows will be crossed with the key findings in the participation analysis for recruitment and service usage. The service usage findings will be regression adjusted to account for differences in beneficiary characteristics across sites.

By synthesizing the key findings into one table, the BOND team can assess whether any patterns emerge in the relationship between the participation and process findings.[119] This information—which will be suggestive rather than confirmatory—is important in assessing whether the decision to use the offset or related services was affected by the service delivery process. For example, the BOND team can assess whether any process indicators, such as days to process offset, are related to participation indicators, such as the use of the BOND work incentives (i.e., the offset).

---

[119]   Formal statistical analysis of the relationship in question is precluded by the limited power provided by the sample when process findings are available for just 10 sites.

Exhibit 8-3.   Cross Site Comparisons of Process and Participation Findings (Table Shell)

Process Findings	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10
Offset										
Days to process of offset										
WIC and EWIC services[a]										
Met outreach and engagements (e.g., elapsed time from receipt of offset notification letter to first contact by site staff)										
Met work-focused interview benchmarks										
Met EWIC benchmarks (T22-only)										
Total direct service time,										
Number of clients per month										
Other characteristics (e.g., staff turnover)										
Environment										
Population density (persons per mile)										
Service environments (relative to other sites)										
Relatively strong local economy										
Participation Findings										
Recruitment Outcomes (Regression adjusted)										
Stage 2 Volunteer participation rate										
Service Usage (Regression adjusted)										
Use of BOND Work Incentives										
T1										
T21										
T22										
Use of WIC services										
T1										
T21										
T22										
Use of EWIC services (T22-only)										

Source: Process and participation findings in Chapters 4 and 5. The recruitment outcomes and service usage findings will be regression adjusted to account for differences across sites in beneficiary characteristics.

[a]   See Exhibit 4-7 for more details on the WIC and EWIC benchmark indicators

8.1.2   The potential role of context—programmatic and economic—in influencing results

Contextual factors vary from site to site, and even within site by geographic subunit such as state or metropolitan area. Impact estimates can be computed for beneficiaries living in each such area, and a

statistical test run to see if significant differences in impacts occur across locations. Location-specific analysis of the two central outcomes of the study—BOND's effects on beneficiaries' earnings and SSDI benefit amounts—seems most appropriate. The question then arises: what accounts for differences in impacts from one location to another? This is not a question that can be answered definitively, since many possible factors are at work and can be confounded with one another in any attributional analysis. Still, useful hypotheses about local influences on BOND's effectiveness can emerge from the examination of impact variations by site, especially hypotheses about the role of local policies and programs and the role of local economic factors in accounting for BOND's impact.

A variety of methods exists for examining how intervention impacts vary with local characteristics. Bloom et al. (2003) provide a particularly thorough and lucid treatment of this subject, and we propose to use their model as the foundation for a BOND analysis of site-to-site variation in impacts for both the Stage 1 and Stage 2 sub-studies. The most critical aspect of the model is the selection of local factors to include in the analysis; leaving out important determinants that correlate with included determinants results in biased measurement of the influence of the included factors.[120] At the same time, the number of localities available in the data limits the number of site-level factors that can be studied. Just 10 localities—if each BOND site is considered a locality and not subdivided—clearly would not do. So as the first step in this research, we will examine possible boundaries for subdividing the individual sites into multiple localities.

Many local factors of potential importance to impacts can be identified now; others will emerge over the course of the evaluation. Programmatic factors—many of them measured in the process analysis—that may associate with larger or smaller impacts include:

- Strength of WIPA program;

- Implementation issues with WIC;

- Implementation issues with EWIC;

- State income support program rules (e.g., workers compensation, SSI state supplement);

- Public health insurance provisions; and

- Ticket Employment Network availability.

Local economic factors that may be associated with larger or smaller impacts include:

- Tax rules;

- Availability of public transportation; and

- Employment per capita.

---

[120]   Omission of important person-level determinants of impacts is not a concern, given the strong data available in the BOND evaluation on individual background characteristics and the very large degrees of freedom in the person-level data.

Some of these factors can be measured for relatively small geographic areas (e.g., employment per capita) and hence lend themselves to analysis at the sub-site level, while others may have fairly limited potential for geographic disaggregation. In the latter category are measures of state-based elements such as state income support program rules and public health insurance provisions. It is unclear at this point whether a third category of factors can be disaggregated at all within site, such as implementation issues with EWIC. The number of geographic units examined—and hence the statistical power of the analysis—will be limited by the particular variables included in the model. Ideally, the finest disaggregation would yield 50 to 100 units for analysis, the number typically needed for a conclusive analysis of factors influencing impact magnitudes based on geographic variation. The 10 BOND sites encompass such a large collective geography that including 50 to 100 sub-sites in the analysis of at least some of the listed factors seems reasonable. As noted already, the determination of the exact number of sub-sites attainable for each factor will be the first step in the analysis.

We expect that the same geographic breakdowns will apply to both the Stage 1 analysis and the Stage 2 analysis. Of course, this will mean much smaller samples in a given sub-site for Stage 2 than for Stage 1, just as is true for the overall Stage 2 and Stage 1 samples. Only relatively large variations in impact will be detectable in the Stage 2 analysis compared to the Stage 1 analysis. However, as discussed elsewhere in this Plan, we expect average impacts to be much larger for the Stage 2 sample, since all of its members will have taken an active interest in working and using the benefit offset (unlike the vast majority of Stage 1 sample, a sample that encompasses the entire SSDI caseload regardless of ability or interest in working). Presumably, within this larger average impact there will be larger *differences* in impact magnitude for the sub-site analysis to detect—meaning that even with comparatively small samples and lower statistical power such an analysis will be worth conducting for Stage 2 as well as Stage 1.

8.1.3   How impacts vary with beneficiaries' participation patterns

The Bloom et al. (2003) model also allows one to relate beneficiary participation patterns to higher or lower impacts in the sites. One first calculates treatment/control group differences in participation measures such as those described in Chapter Five (see section 5.4.3 on demonstration effects on the use of various services, and in particular the specific measures listed in the rows of **Exhibits 5-6** and **5-8**). These impacts on beneficiaries' *experiences* are then related to impacts on employment, benefits, and other more distal outcomes. Though conceptually a site-level framework, this analysis is accomplished through a two-level model, with distal outcomes for individual beneficiaries modeled at the first level and impacts on participation experiences at particular sites modeled at the second level. All of the local factors mentioned above are kept in the model, to help isolate the causal effect of participation experiences in creating larger or smaller impacts for beneficiaries in different sites, all other things equal.

8.1.4   Robustness of benefit-cost conclusions to variations in impact

If favorable findings arise in the benefit-cost analysis—positive net benefits for one or more of the BOND interventions from the SSA perspective or the social perspective—we will conduct an assessment of how the impact findings produced this favorable conclusion. Two ways in which the impact findings vary will enter into this examination:

- Some impact measures used in the benefit-cost analysis will be statistically significantly different than zero, while others will not. What if the latter impacts—those not proven to differ from zero—were in fact zero; does the favorable "bottom line" still hold? Or have statistically

insignificant impacts driven that result? We will present these findings in a table of the form illustrated in **Exhibit 8-4**.

- Impact findings may also vary for different types of beneficiaries, such as short- and longer-duration beneficiaries and those working versus not working at baseline. Net benefit totals can be recalculated for these subgroups, using the subgroup-specific impact estimates produced by the impact analysis described in Chapter Six. This will show whether the favorable benefit-cost results hold just for certain segments of the SSDI beneficiary population or instead are widespread across many different types of beneficiaries.

Exhibit 8-4: Net Benefits with and without Statistically Insignificant Impacts (Table Shell)

	Net Benefits to	
Intervention	**SSA**	**Society**
Offset, Full Caseload (T1)		
with insignificant impacts	$ xxx	$ yyy
without insignificant impacts	$ zzz	$ aaa
Offset, SSDI-Only Volunteers (T22)		
with insignificant impacts	$ bbb	$ ccc
without insignificant impacts	$ ddd	$ eee
Offset + EWIC (T22)		
with insignificant impacts	$ fff	$ ggg
without insignificant impacts	$ hhh	$ iii

8.2   Is There a Best Program Design among Those Tested?

Each of the four evaluation components will produce separate findings for Stages 1 and 2 of the demonstration. Similarly, for the two Stage 2 interventions—the benefit offset (T21) and the benefit offset plus EWIC (T22)—the process, participation, impact, and benefit-cost analyses will produce separate results. When evaluation reports provide process findings, the contrasts between T1, T21, and T22 will be noted, and similarly for the participation results when presented, the impact results when presented, and the benefit-cost analysis findings when presented. What will not be presented, however, is a "full spectrum" appraisal of how well each of the interventions fared across the full set of study domains—an appraisal that could reveal which benefit offset approach has the greatest promise among the three tested.

The cross-cutting chapter of the final report will address this aspect of the findings, answering the question: Is there a best program model among the three tested, all things considered? Because concurrent beneficiaries are not part of the Stage 2 interventions, this comparative assessment of the different treatments will focus on which model works best for SSDI-only beneficiaries. At first blush, T1 and T21 would appear to be the same program model, each offering the benefit offset as the only change from current policy. However, these two treatments differ in their outreach strategies—passive mailings for the T1 sample versus active recruitment of the T21 sample. As a result, the overall program model—outreach plus intervention—differs between T1 and T2. So too will the two groups' impacts if, as

expected, their decidedly different outreach approaches lead to substantially different populations receiving the common benefit offset intervention.[121]

8.2.1   Different modes of outreach and responses to outreach

The appraisal will begin by considering information from the participation analysis to determine which of the Stage 1 and Stage 2 outreach approaches produced the better yield—i.e., the highest share of the SSDI-only caseload using the benefit offset. This analysis will need to recognize that this share for the Stage 2 treatment groups may differ from what would have been achieved using the same outreach model in a national program, since volunteering for the offset in the demonstration may be suppressed by the uncertainty of actually obtaining the offset, given random assignment. In particular, 62 percent of volunteers will be randomized into one of the T21 and T22 groups that receive the offset offer, whereas presumably in a national program 100 percent of volunteers would receive the offset. Beneficiary awareness that chances are less than 100 percent may cause some to not volunteer who otherwise would have volunteered and used the offset. Patterns of offset use will also be related to process analysis findings on how well outreach was conducted in each stage as in Section 8.1.1 above except here for the specific purpose of making comparisons across intervention models. They will also be broken down at Stage 2 between beneficiaries who receive EWIC (T22) and beneficiaries who do not (T21).

8.2.2   Work-focused activities: steps, duration, labor market outcomes

Many steps lie along the path to benefit exit through earnings, all of which will be tracked in the different treatment group samples by the participation analysis. Working for pay, earning above the SGA level, exhausting the TWP and grace period, receiving benefits under the offset, earning above the zero-benefit amount on the offset schedule—all must take place for treatment group members to exit SSDI through employment. The T1, T21, and T22 samples may all progress through these steps at different rates, with perhaps more encouraging results emerging from one of the treatments than the other two. The participation analysis will supply this information sample by sample, while the cross-cutting chapter adds the comparative assessment.

8.2.3   Impacts—what interventions affected which outcomes?

The three different treatments will likely yield different patterns of (statistically significant) impacts for SSDI-only beneficiaries. One treatment may dominate another in impact terms, producing statistically significant impacts on all of the same outcomes plus statistically significant impacts for one or more *additional* outcomes. More likely, the different treatments will have comparative strengths and weaknesses when impacts are appraised across the T1, T21, and T22 samples. Even if a "winner" cannot be declared, the contrasts among interventions in the impacts achieved could be illuminating to policy. Looking back at differences in process and participation analysis findings for the different interventions may suggest hypotheses concerning the reasons impacts occur for certain outcomes for one treatment model and not for other models.

8.2.4   Best return-on-investment for SSA and society

As a final step in appraising the comparative success of the different intervention models using evidence from the four evaluation components, we will look at the "bottom line" net benefit figures for each model

---

[121]   This assumes that the impact of the offset differs among different subpopulations of the beneficiary caseload.

from the benefit-cost analysis. The focus will be on net benefits to SSA, although social net benefits will also be examined for the T1, T21, and T22 intervention samples. By denominating all benefits and costs on a per-beneficiary basis, we will ensure that the benefits-minus-cost findings for the different treatment groups are comparable to one another (all will apply to just SSDI-only beneficiaries). The larger the difference the higher the return on investment for the BOND intervention considered—for SSA and for society.

This return-on-investment assessment will provide a capstone on the appraisal of the successes and struggles of the different BOND treatments. A high participation-yield, high impact, high rate-of-return treatment model may emerge. Or the evidence across study components may be more mixed. In any case, summing it all up in one place should be informative to policy.

8.3   How Might Greater Success Have Been Achieved?

Also informative to policy will be identifying options for *improving* the offset's design and administration and potentially increasing its impact, should it be made a national policy. An integrative analysis will be conducted based on the findings from the impact, participation, process, and benefit-cost analyses to generate hypotheses as to what changes might increase the effectiveness of a future benefit offset policy.

8.3.1   Overcoming "frictions" that may have inhibited success

The first step in looking for ways to potentially enhance policy effectiveness is what we call a "frictions" analysis. A "frictions" analysis will be conducted to develop hypotheses related to the following key question:

- Why were BOND's impacts not larger?

This is an interesting question, regardless of how large the estimated impacts actually are. It is also a question that cannot have a definitive answer without testing different variants of the intervention's design and implementation in future random assignment experiments. Still, SSA is interested in potential hypothesized reasons that impacts are not larger, drawn from the experience of the current demonstration.

We will structure this integrative analysis around the BOND logic model (see **Exhibit 2-9**, above). The analysis will focus on potential personal, environmental and programmatic points of friction, such as those identified in **Exhibit 8-5**. Each of these points represents a potential reason why some beneficiaries did not work, increase their earnings more, or have their benefits reduced. The integrative analysis will pull together evidence of the prevalence of these potential barriers to work and benefit reduction from other evaluation components.

Exhibit 8-5.   Potential Points of Friction

Personal
• Limited skills
• Health status
• Chronic conditions and their severity
• Number, type and severity of functional and activity limitations
• Competing demands on time (e.g., for self care, child care, household, volunteer or other work that does not generate reported earnings)
• Size of household income
Environmental
• Tax rules and their implications for net impact of higher earnings on household disposable income under the benefit offset
• Effects of work and higher earnings on other income and benefits (private disability insurance, workers' compensation, veterans' benefits, SSI, subsidized housing, food stamps, transportation assistance, etc.)
• The nature and strength of the labor market
• Limited access to transportation
• Limited access to physical and mental health services
• Limited availability of accommodations or assistive technologies
• Health care insurance (e.g., eligibility for Medicaid under the Buy-in or in another category; eligibility for Medicare; coverage limitations)
• Limitations on access to appropriate employment services
Programmatic
• Ineffective outreach
• Poor access to work incentive counseling, or ineffective counseling
• Problems using Ticket related to participation in BOND
• Difficulties reporting earnings
• Problems with work CDRs and benefit adjustments (delayed determinations, overpayments or underpayments)

For this assessment, a number of hypotheses could emerge about the implications of different beneficiary, programmatic, and/or environmental difficulties that would need to be addressed to produce larger impacts from a benefit offset in the future. These could include, for example:

1. The interventions have impacts on intermediate outcomes, such as use of employment services and return to work, but fail to result in sufficient impacts on earnings to reduce benefits;

2. Lack of information, inaccurate information, or distrust deterred treatment subjects from using the offset;

3. Problems in assessment of TWP completion affect key outcomes (a problem identified in the four-state pilot);

4. Problems in the reporting and processing of earnings and IRWE estimates, adjustment of benefits, and end-of-year reconciliation affect key outcomes;

5. The effect of earnings increases on other public and private benefits or taxes discouraged use of the SSDI benefit offset;

6. The state of the local labor market had an effect on key impacts; and

7. Other aspects of the local environment had an effect on key impacts.

Every such scenario put forth will be backed by descriptive and correlational information from the evaluation, but not with any confirmatory proof (i.e., they will not be backed by the rigorous random assignment design of the main impact evaluation). We will make the suppositional nature of these integrative findings clear whenever they are presented. Even with these caveats, we expect SSA to gain from the exploration of potential future policy issues in this way.

8.3.2   Using subgroup findings to guide intervention refinements

Impacts on subgroups will be separately estimated, for the subgroups described in Chapter Six. This information can guide intervention improvements in two ways:

- By identifying populations for which the offset models tested in BOND were effective—i.e., produced favorable, statistically significant impacts—and hence populations suited to the application of the same intervention in the future; and

- By identifying populations for which the outreach-plus-intervention models tested in BOND were *not* effective, populations which might potentially benefit from future tests of different work incentive policies or of alternative outreach strategies as a means of implementing the same benefit offset.

By targeting the demonstration's outreach/offset approach on just those beneficiary subgroups shown by the BOND demonstration to benefit from them, the average impact per beneficiary—and the return on investment to SSA for each dollar spent—would go up in future replications of the policies. The cross-cutting chapter will point out these opportunities for SSA's consideration, concentrating on subgroups that might be solicited using distinctive outreach strategies in the future (e.g., one for younger beneficiaries, one for older beneficiaries) or that might be presented with different benefit offset rules (e.g. offset rates that vary with time on the rolls). The chapter will also highlight the converse case: beneficiary subpopulations for which the BOND outreach/intervention "treatments" had no appreciable impacts. Possible reasons for this lack of effects will be drawn from the "frictions" analysis just described, and may suggest alternative versions of work incentive approaches that could succeed (or are at least be worth testing) for those populations.

Chapter Nine.   Reporting Findings to SSA

9.1   Introduction and Overview of Chapter

The BOND Team will prepare a number of reports throughout the demonstration. The timing of each report depends on the availability of data and the analysis of data from various sources. Due to the large number of reports the BOND Team will produce throughout BOND, it is important that the team have a clear report timeline. This chapter describes the timing of data availability and data analysis for reports as well as the content of each report.

9.2   Content and Timing of Reports

A key issue in reporting findings is that the timeframe over which each data source is available varies (see Chapter Three for more details). The BODS and SSA program and earnings administrative records will generally be available throughout the project. The BODS data and SSA program data should be available with only a minimal lag (at most a month). The SSA earnings administrative records are calendar year, and not available until nine months after the close of the calendar year. Survey data for Stages 1 and 2 will be available for select reports. Finally, other administrative data, such as Medicare, RSA, and Medicaid data, will generally only be available for later reports due to the long lags in these data's availability.

Just as the timing of data analysis depends on data availability, the timing and content of evaluation reports depend on data analysis. A certain amount of time will be needed to ensure that the data are clean and consistent, to conduct the analyses, and to draft reports. The content of reports will reflect the data available early enough to allow data analysis and write up.

The BOND evaluation reports will provide timely and comprehensive information about the demonstration outcomes **(Exhibit 9-1).** The Early Assessment reports for Stages 1 and 2 will provide information about early implementation activities. The Letter Reports will provide information on earnings and program impacts throughout the SSA demonstration. Finally, the interim and final synthesis reports will provide comprehensive information on all outcomes by tying together the planned analyses described in Chapters Four through Seven. In order to effectively disseminate findings, the team will write all reports in plain language intended for a general, non-technical audience. The outcomes presented in each report will depend primarily on the data available at the time of the report. The BOND Team will use each report as an opportunity to build upon the previous report's findings. A detailed description of each planned report by Stage follows.

Exhibit 9-1.   Deliverable Schedule for Evaluation Reports

Deliverable	Draft submission date	Data to be included	Data Period
Stage 1			
Early Assessment Report	December 2011	TRF	Jan. 2011-May 2011
		BODS	Jan. 2011-May 2011
Policy Brief based on Early Assessment Report	January 2012	TRF	Jan.2011-May 2011
		BODS	Jan. 2011-May 2011
Annual Letter Report (1)	December 2012	TRF	Jan. 2011-Dec. 2011
		SSA Earnings	Jan. 2011-Dec. 2011
		BODS	Jan. 2011-Dec. 2011
Annual Letter Report (2)	December 2013	TRF	Jan. 2011-Dec. 2012
		SSA Earnings	Jan. 2011-Dec. 2012
		BODS	Jan. 2011-Dec. 2012
Interim Participation, Process, and Impact Report (1)	December 2015	TRF	Jan. 2011-Dec. 2013
		BODS	Jan. 2011-Dec. 2013
		SSA earnings	Jan. 2011-Dec. 2013
		RSA	Jan. 2011-Dec. 2012
		Medicare data	Jan. 2011-Dec. 2013
		Medicaid data	Jan. 2011-Dec. 2011
		Stage 1 survey	Mar. 2014-Jun. 2014
		Round 6 site visit	Sep. 2014
Annual Letter Report (3)	December 2015	TRF	Jan. 2011-Dec. 2014
		SSA Earnings	Jan. 2011-Dec. 2014
		BODS	Jan. 2011-Dec. 2014
Annual Letter Reports (4)	December 2016	TRF	Jan. 2011-Dec. 2015
		SSA Earnings	Jan. 2011-Dec. 2015
		BODS	Jan. 2011-Dec. 2015
Interim Participation, Process, and Impact Report (2)	December 2017	TRF	Jan. 2011-Dec. 2016
		BODS	Jan. 2011-Dec. 2016
		SSA earnings	Jan. 2011-Dec. 2015
		RSA	Jan. 2011-Dec.2014
		Medicare data	Jan. 2011-Dec. 2016
		Medicaid data	Jan. 2011-Dec.2013
		Stage 1 survey	Mar. 2014-Jun. 2014
		Round 7 site visit	Sep. 2015
Stage 2			
Early Assessment Report	March 2013	TRF	Jan. 2011-Dec. 2011
		BODS	Jan. 2011-Dec. 2011
		Round 3 site visit	Sep. 2012
Policy Brief based on Early Assessment Report	April 2013	TRF	Jan. 2011-Dec. 2011
		BODS	Jan. 2011-Dec. 2011
		Round 3 site visit	Sep. 2012

Deliverable	Draft submission date	Data to be included	Data Period
Interim Participation, Process, and Impact Report (1)	March 2014	TRF	Jan. 2011-Dec. 2012
		BODS	Jan. 2011-Dec. 2012
		SSA Earnings	Jan. 2011-Dec. 2012
		Medicare	Jan. 2011-Dec. 2012
		Stage 2 (baseline)	Apr. 2011-Sep. 2011
		Round 5 site visit	Sep. 2013
Annual Letter Report (1)	June 2014	TRF	Jan. 2011-Dec. 2012
		BODS	Jan. 2011-Dec. 2012
		SSA Earnings	Jan. 2011-Dec. 2012
Annual Letter Report (2)	June 2015	TRF	Jan. 2011-Dec. 2013
		BODS	Jan. 2011-Dec. 2013
		SSA Earnings	Jan. 2011-Dec. 2013
Interim Participation, Process, and Impact Report (2)	June 2016	TRF	Jan. 2011-Dec. 2014
		BODS	Jan. 2011-Dec. 2014
		SSA Earnings	Jan. 2011-Dec. 2014
		Medicare	Jan. 2011-Dec. 2014
		Stage 2 (baseline)	Apr. 2011-Sep. 2012
		Stage 2 (12 month)	Apr. 2012-Sep.2013
		Round 7 site visit	Sep. 2015
Annual Letter Report (3)	June 2017	TRF	Jan. 2011-Dec. 2015
		BODS	Jan. 2011-Dec. 2015
		SSA Earnings	Jan. 2011-Dec. 2015
Synthesis Reports			
Final Process Study Report	June 2014	TRF	Jan. 2011-Dec.2013
		BODS	Jan. 2011-Dec. 2013
		Rounds 1-5 Site Visits	Sep. 2013
Final Report on Participation, Impacts, and Benefits and Costs	October 2017	TRF	Jan. 2011-Dec.2015
		BODS	Jan. 2011-Dec. 2015
		SSA Earnings	Jan. 2011-Dec. 2015
		RSA	Jan. 2011-Dec.2014
		Medicare	Jan. 2011-Dec.2015
		Medicaid	Jan. 2011-Dec. 2013
		Stage 2 (baseline)	Apr. 2011-Sep. 2012
		Stage 2 (12 month)	Apr. 2012-Sep.2013
		Stage 2 (36 month)	Apr. 2014-Sep. 2015
		All site visits	Sep. 2015
Special Topic Reports			
TBD	TBD		

Notes: Data availability (see Chapter Three for more details) is the basis for the anticipated time frames. For the most part, reports will include a full year of administrative data. Three exceptions are the Early Assessment Report, the Policy Brief based on the Early Assessment Report, and Annual Letter Report (1) for Stage 1, which will provide partial year data on outcomes during the early stages of implementation. The final report will include a full summary of outcomes. Notes to SSA, rather than formal reports, will summarize information from site visits 1, 2, and 4.

9.2.1   Stage 1 Reporting

The Stage 1 reports are structured to provide updates on impacts at least once every year. These reports include:

- **Early Assessment Report (December 2011).** The Early Assessment Report will document strengths and weaknesses of project operations, and will summarize the characteristics of prospective BOND subjects at baseline. It will also present comparisons of T1 and C1 subjects to assess whether any differences in characteristics arose, by chance, during random assignment. The findings will give SSA an in-depth summary of Stage 1 BOND subject characteristics just prior to their entry into BOND.

- **Policy Brief (January 2012).**The Stage One Policy Brief, including six months of random assignment data, will summarize the key findings from the Early Assessment Report in a form appropriate for external stakeholders. The Policy Brief will allow SSA to disseminate initial BOND findings to a wide audience and is a key component of keeping external stakeholders informed throughout BOND.

- **Annual Letter Reports (December of 2012, 2013, 2015, and 2016).** Taking full advantage of the availability of administrative data throughout the demonstration, the evaluation team will perform periodic comparisons of treatment and control group members (and the statistical significance of any differences) on key outcomes. Letter Reports will present the findings from these analyses and provide snapshots of the effect of benefit offset for all T1 subjects compared to current law (C1), one year, two years, four years, and five years after random assignment. (The interim reports will contain impact findings in years three and six.)

- **Interim Participation, Process, and Impact Reports (December 2015 and December 2017).** The two Interim Reports will include the same types of impact estimates as the Letter Reports (updated for years three and five) and provide additional information from the 36-month follow-up survey and the participation and process analyses. These reports will draw on all types of BOND data (administrative data, survey data, and BODS) described in Chapter Three. The first Interim Report (December 2015) will present impacts from the 36- month follow-up survey and process analyses.

9.2.2   Stage 2 Reporting

Reporting on Stage 2 aligns with the timing of Stage 2 activities. The pilot for Stage 2 will begin in January 2011 with full-scale random assignment beginning in April 2011. Baseline interviewing and random assignment will be complete at the end of September 2012.

Corresponding to these Stage 2 activities are the Stage 2 data collection efforts. The 12-month follow-up survey will start in April 2012, coinciding with the one year anniversary of full implementation in April 2011, and will be completed by December 2013.[122]The more extensive 36-month follow-up survey will begin in all sites in April 2014. Data collection for this survey will be complete by December 2015.

---

[122]   The December date allows up to three months t complete the final interviews once released to the field in September 2013.

The reporting schedule for Stage 2 is generally similar to Stage 1, though the timing of the reports differs because enrollment periods for Stage 1 and Stage 2 are different. For example, the team will submit Letter and Interim Reports for Stage 2 in June of each year, except for the first Interim Report submitted in March 2014. This differs from Stage 1 for which the team will submit all reports in December of each year. As with Stage 1, the Stage 2 reports are also designed to provide annual impacts each year. The evaluation will include four types of Stage 2 reports:

- **Early Assessment Report (March 2013).** As in Stage 1, the Early Assessment Report will document strengths and weaknesses of project operations. The report and brief will summarize the characteristics of prospective BOND subjects at baseline. It will also present comparisons of T21, T22 and C2 subjects to assess whether any differences in characteristics exist at the completion of random assignment.

- **Policy Brief (April 2013).** Like the Stage 1 Policy Brief, the Stage 2 Policy Brief will encapsulate the key findings from the Early Assessment Report for external stakeholders.

- **Annual Letter Reports (June 2014, June 2015, and June 2017).** As with Stage 1, the Letter Reports will provide SSA annual updates on key impacts of the demonstration. The first Stage 2 Letter Report will also include preliminary data from the 12-month follow-up survey. These reports will provide snapshots of the effect of the benefit offset for all T21 and T22 subjects compared to current law (and T21 compared to T22), one year, two years, and four years after random assignment. The second Interim Report will include the impact findings in year three.

- **Interim Participation, Process, and Impact Reports (March 2014 and June 2016).** Given the more comprehensive nature of the Stage 2 treatments, as well as the fact that the evaluation will survey Stage 2 volunteers three times (versus Stage 1 sample members who are only surveyed once), the Stage 2 reports will provide a richer set of findings. The two Interim Reports will include the same types of impact estimates as the Letter Reports (updated for year four) and provide additional information from the participation and process analyses. These reports will draw on all the types of BOND data (administrative data, survey data and BODS) described in Chapter Three. The first Interim Report (March 2014) will incorporate findings from the 12-month follow-up survey and process analyses. The second Interim Report (June 2016) will include findings from the 36-month follow-up survey and a later round of findings from the process analysis.

9.2.3   Synthesis Reports

Two reports will synthesize findings for Stage 1 and Stage 2. A Final Process Study Report (June 2014) will document the qualitative findings from Stage 1 and Stage 2. It will describe the treatments received by all groups, the implementation process, the context of the demonstration, as well as the characteristics of beneficiaries in the research samples.

A Final Report on Participation, Impacts, and Benefits and Costs (October 2017) will summarize all of the key results from the demonstration. This report will address all of the research questions for BOND and will provide a comprehensive assessment of the demonstration. It will include an analysis of all survey data and the maximum possible length of administrative data follow-up (six years for Stage 1, four and one-half years for Stage 2). The final evaluation report will integrate elements of the process/implementation, participation, and impact analyses into a coherent set of findings as discussed in

Chapter Eight. The report will include full technical details and comprehensive documentation, primarily in appendices. It will also include a chapter on benefit-cost analysis. Finally, researchers will place the findings in their program and policy context, along with recommendations for future directions.

9.2.4   Special Topic Reports

The BOND Team will also prepare Special Topic Reports to examine topics related to BOND that cannot be readily foreseen at the outset of the demonstration. The exact topics for these reports will be decided in consultation between SSA and the BOND Team. The list below provides several potential topics.

- **Impacts of the Benefit Offset for New Beneficiaries.** This Special Topic Report would use demonstration data to project the impacts for new award cohorts under the assumption of no induced demand. This analysis would take advantage of the Stage 1oversampling of beneficiaries who were in their first three years on the rolls. We would estimate the relationship between length on the rolls at offset offer and the impact of BOND on key outcomes, then project impacts for those offered the offset at the time of their award (i.e., those with a length on the rolls of zero).

- **The Effects of Taxes and Other Benefits on the Impacts of the Benefit Offset.** This report would focus on how a) differences between the tax treatment of earnings and benefits, and b) the receipt of other public and private benefits by SSDI beneficiaries, affect the incentives to earn above SGA, the use of the offset by BOND subjects in T1, T21 and T22, and the impact of BOND on the household disposable incomes for those who do use the offset.

- **Implications of the BOND Findings for Induced Demand.** Although the demonstration cannot produce estimates of the impacts of an offset on entry into SSDI (i.e., induced demand), it will produce information of relevance to the likely size of induced demand as well as policy approaches for mitigation of induced demand. The BOND Team will be able to estimate the impact of the offset on household disposable income over a five year period, and analyze how that impact varies with personal characteristics, including pre-SSDI earnings and occupation. Such analysis will provide information on: a) the change in expected income from SSDI entry for workers who are not beneficiaries, and b) the types of workers that are most likely to experience large gains in income from SSDI entry and returning to work under an offset, relative to the alternative of not entering SSDI.

9.3   Briefings

The BOND team will regularly brief SSA on the findings from the evaluation. In addition, there is great interest in BOND in the disability community, including all levels and branches of government, for-profit and not-for-profit organizations as well as disability advocates. A careful plan for providing timely updates to this community, both on the progress of BOND and at its conclusion, is vital. The value of a project like BOND is not just in producing reliable findings, but in doing everything possible to see that relevant actors actually use the findings to inform programs and policies. To ensure dissemination and usefulness of findings, the BOND Team will provide briefings on critical findings throughout the project to external stakeholders including policy makers and advocates. The BOND Team will work with SSA to prepare briefings that best serve SSA's needs in distributing BOND findings to outside audiences.

References

Adam, S., A. Bozio, C. Emmerson, D. Greenberg, and G. Knight. 2008. *A Cost-Benefit Analysis of Pathways to Work for New and Repeat Incapacity Benefit Claimants*. Research Report 498, Department for Work and Pensions, Norwich.

Autor, David and Mark Duggan. 2003. "The Rise in the Disability Rolls and the Decline in Unemployment," *Quarterly Journal of Economics* 118, 1: 157–206.

Ballard, Charles L., John B. Shoven, and Jon Whalley. 1985. "General Equilibrium Computations of the Marginal Welfare Costs of Taxes in the United States." *American Economic Review* 75(1), pp. 128-138.

Bell, Allison, Brian Sokol, Jay Hoover, and Matt Thurston. 2010. "BOND Implementation and Evaluation Test Plan for BOND Operations Data System Version 2.0 Final Deliverables 8.4 & 8.8." Bethesda, Maryland: Abt Associates, August.

Ben´itez-Silva, H., M. Buchinsky, and J. Rust. 2006. *Induced Entry Effects of a $1 for $2 offset in SSDI Benefits*. Manuscript, State University of New York at Stony Brook.

Besharov, Douglas. 2002. "The Past and Future of Welfare Reform." *The Public Interest.* December 22.

Bloom, H.S. 1984. "Accounting for No-Shows in Experimental Evaluation Designs," *Evaluation Review*, April 1984.

Bloom, Howard S., Carolyn J. Hill, and James A. Riccio. 2003. "Linking Program Implementation and Effectiveness: Lessons from a Pooled Sample of Welfare-to-Work Experiments," *Journal of Policy Analysis and Management*, Vol. 22 No. 4, 551-575.

Blundell, Richard and Thomas MaCurdy. 1999. "Labor Supply: A Review of Alternative Approaches." Chapter 27 in O. Ashenfelter and D. Card (eds.) *Handbook of Labor Economics*. Volume 3. 1559-1695.

Boardman, Anthony E, David H. Greenberg, Aldan R. Vining, and David L. Weimer. 2011. *Cost-Benefit Analysis: Concepts and Practice*. 4th edition, Upper Saddle River, NJ: Prentice Hall.

Bound, J. and R.V. Burkhauser. 1999. "Economic analysis of transfer programs targeted on people with disabilities." *Handbook of Labor Economics, 3*, 3417-3528.

Brazier, J.E., J. Ratcliffe, A. Tsuchiya, and J. Solomon. In press. *Measuring and Valuing Health for Economic Valuation*. Oxford: Oxford University Press.

Bureau of Labor Statistics, Employment Cost Trends, Civilian Workers Tables. 2010. "Table 1: Employer costs per hour worked for employee compensation and costs as a percent of total compensation: Civilian workers, by major occupational and industry group, September 2010."http://www.bls.gov/news.release/pdf/ecec.pdf. News Release, December 8, 2010.

Bureau of Rehabilitation Services, State of Connecticut. 2009. *Benefit Offset Pilot Demonstration Connecticut Final Report*. Prepared for the U.S. Social Security Administration. Hartford: Bureau of Rehabilitations Services.

Burkhauser, R.V. and M.C. Daly. 1996. "Employment and Economic Well-Being Following the Onset of a Disability: The Role for Public Policy." In Jerry Mashaw, Virginia Reno, Richard V.

Burkhauser, and Monroe Berkowitz (eds.), *Disability, Work, and Cash Benefits*. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, pp. 59-102.

Burtless, G. 1986. "The work response to a guaranteed income: A survey of experimental evidence." *Lessons From the Income Maintenance Experiments,* 22-59.

Campbell, H. and K. Bond. 1997. "The cost of public funds in Australia." *The Economic Record,* vol. 73.

Chambless, Cathy, George Julnes, Sara McCormick, and Anne Brown-Reither. 2009. *Utah SSDI $1 for $2 Benefit Offset Pilot Demonstration Final Report*. Prepared for the U.S. Social Security Administration. Salt Lake City: Center for Public Policy and Administration, University of Utah.

Chen, Susan and Wilbert van der Klaauw. 2008. "The work disincentive effects of the disability insurance program in the 1990s." *Journal of Econometrics*, Elsevier, vol. 142(2), pages 757-784, February.

Congressional Budget Office. 2009. "Historical Effective Federal Tax Rates: 1979-2006." April 2009.http://www.cbo.gov/publications/collections/collections.cfm?collect=13.

Dahlby, B. 1994." The distortionary effect of rising taxes." In W. Robson and W. Scarth (eds), *Deficit Reduction: What Pain, What Gain.* Toronto: C. D. Howe Institute.

Delin, Barry, Ellie A. Hartman, Christopher W. Sell, and Anne E. Brown-Reither. 2009. *Testing a SSDI Benefit Offset: An Evaluation of the Wisconsin SSDI Employment Pilot.* University of Wisconsin–Stout.

Eissa, N. and H.W. Hoynes. 2006. "Behavioral responses to taxes: Lessons from the EITC and labor supply." *Tax Policy and the Economy, 20*, 73-110.

Employee Benefit Research Institute. 2005. *EBRI Databook on Employee Benefits, Chapter 3, Employer Cost for Employee Compensation*. Updated April 2005. www.ebri.org/pdf/publications/books/databook/DB.Chapter%2003.pdf.

Fujiwara, Daniel. 2010. *The Department for Work and Pensions Social Cost-Benefit Analysis Framework: Methodologies for Estimating and Incorporating the Wider Social and Economic Impacts of Work in Cost-Benefit Analysis of Employment Programmes.* Department for Work and Pensions, Working Paper No 86.

Fullerton, D. and Y.K. Henderson. 1989. "The marginal excess burden of different capital tax instruments." *Review of Economics and Statistics*, vol. 71, pp. 435–42.

Gimm, Gilbert W., Kristin L. Andrews, Jody L. Schimmel, Henry T. Ireys, and Su Liu. 2009. *Analysis of Medical Expenditures and Service use of Medicaid Buy-in Participants, 2002-2005. Final Report.* Submitted to the Centers for Medicare & Medicaid Services, Disabled and Elderly Health Programs Group. Washington, DC: Mathematica Policy Research, October 2009.

Government Accountability Office. 2004. *Social Security Disability: Improved Processes for Planning and Conducting Demonstrations May Help SSA More Effectively Use Its Demonstration Authority.* GAO-05-19. Washington, DC: GAO.

Government Accountability Office. 2007. *Vocational Rehabilitation: Improved Information and Practices May Enhance State Agency Earnings Outcomes for SSA Beneficiaries.* GAO-07-521. Washington, DC: GAO.

Greenberg, David H. 1997. "The Leisure Bias in Cost-Benefit Analyses of Employment and Training Programs." *Journal of Human Resources*, 32(2), pp. 413-439.

Greenberg, David H., Charles Michalopoulous, and Philip K. Robins. 2004a. "What Happens to the Effects of Government-Funded Training Programs Over Time?" *Journal of Human Resources* 39(1) 2004, 277–293.

Greenberg, David, Karl Ashworth, Andreas Cebulla, and Robert Walker. 2004b. "Do Welfare-to-Work Programmes Work for Long?" *Fiscal Studies* 25(1), 27–53.

Greenberg, David H. and Philip K. Robins. 2008. "Incorporating Nonmarket Time into Benefit-Cost Analyses of Social Programs: An Application to the Self-Sufficiency Project." *Journal of Public Economics*, 92, pp. 766-794.

Greenberg, David, Genevieve Knight, Stefan Speckesser, and Debra Hevenstone. 2010. *Improving DWP Assessment of the Relative Costs and Benefits of Employment Programmes.* Policy Studies Institute, London.

Grogger, J. and Lynn A. Karoly. 2005. *Welfare Reform: Effects of a Decade of Change.* Cambridge, MA: Harvard University Press.

Hamermesh, Daniel S. 1993.*Labor Demand*. Princeton, NJ: Princeton University Press.

Hotz, V.J. and J.K. Scholz. 2003. *The Earned Income Tax Credit*. In Means-Tested Transfer Programs in the United States, ed. by R. A. Moffitt. Chicago: University of Chicago Press, pp. 141–198.

Hoynes, H.W. and R.A. Moffitt. 1996. "The effectiveness of financial work incentives in social security disability insurance and supplemental security income: Lessons from other transfer programs." *Disability, Work, and Cash Benefits,* 189-222.

Hoynes, Hillary and Robert Moffitt. 1999. "Tax Rates and Work Incentives in the Social Security Disability Income Program: Current Law and Proposed Reforms." *National Tax Journal*, 52 (4), 623-654.

Isaacs, Julie. 2008. *The Costs of Benefit Delivery in the Food Stamp Program: Lessons from a Cross-Program Analysis.* Washington D.C., Economic Research Service, United Department of Agriculture, www.ers.usda.gov.

Johnson, David S., Stephen B. Reed, and Kenneth J. Stewart. 2006. "Price Measurement in the United States: A Decade after the Boskin Report." *Monthly Labor Review*, pp. 10-19.

Liu, Su and David C. Stapleton. 2010. *How Many SSDI Beneficiaries Leave the Rolls for Work? More than You might Think.* Disability Policy Research Brief No. 10-01. Washington, DC: Center for Studying Disability Policy.

Livermore, G. A. 2003. *Wage Reporting and Earnings-Related Overpayments in the Social Security Disability Programs Status, Implications, and Suggestions for Improvement.* Report to the Ticket to Work and Work Incentives Advisory Panel. Washington, DC: Cornell Center for Policy Research.

Livermore, Gina A. 2009. *Work-Oriented Social Security Disability Beneficiaries: Characteristics and Employment-Related Activities.* Disability Policy Research Brief No. 09-05. Washington, DC: Center for Studying Disability Policy.

Livermore, G,A, , D. Wright, A. Roche, and E. Grau. 2009. "2006 National Beneficiary Survey: Background and Statistical Tables." Report No. 4. In *Work Activity and Use of Employment Supports Under the Original Ticket to Work Regulations*. Report Submitted to the Social Security Administration. Washington, DC: Mathematica Policy Research.

Long, David, Glen Schneider, Max Elsman, and Judith D. Feins. 2010. *BOND Implementation and Evaluation Updated Detailed Specifications and Procedures for Intake based upon SSA Business Procedures.* Final Report to SSA, Deliverable 12.1. Cambridge, Massachusetts.

Maestas, Nicole, Kathleen Mullen, and Alexander Strand. 2010. *Does Disability Insurance Discourage Work?* Working Paper 2010-241. Ann Arbor, MI: University of Michigan Retirement Research Center.

Mamun, Arif, Paul O'Leary, David Wittenburg, and Jesse Gregory. 2010. *Employment among SSA Disability Program Beneficiaries: 1996–2007.* Report submitted to the Department of Education. Ithaca, New York: Cornell University.

McInnis, Debi, Stephen Bell, and Anne Ciemnecki. 2010. *BOND Implementation and Evaluation Updated Survey Plan.* Report to the Social Security Administration.

Moffitt, R.A. 2002. Welfare programs and labor supply. In A. Aulerbach and M. Feldstein (eds.) Handbook of Public Economics: Vol. 4.

Moffitt, R. A. 2004. "The role of randomized field trials in social science research: A perspective from evaluations of reforms of social welfare programs." *American Behavioral Scientist,* 47(5), 506.

National Research Council. 2001. Evaluating Welfare Reform in an Era of Transition. Panel on Data and Methods for Measuring the Effects of Changes in Social Welfare Programs, Robert A. Moffitt and Michele Ver Ploeg, Editors. Committee on National Statistics, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

OASDI Trustees Report: Section II.C, Assumptions, Table II.C1. A. 2009. Available at http://www.ssa.gov/OACT/TR/2009/.

O'Day, Bonnie and David Vandergoot. 2010. *BOND Implementation and Evaluation: Benefit Counseling: Specifications and Costs, Deliverable 10.1 Response to Comments*. Report to the Social Security Administration.

O'Hagan, A., J.E. Brazier, and S.A. Kharroubi. 2007. *A Comparison of United States and United Kingdom EQ-5D Health States Valuations Using a Nonparametric Bayesian Method.* University of Sheffield Health Economics and Decision Science.

Olsen, Anya and Russell Husdon. 2009. "Social Security Administration's Master Earnings File: Background Information." *Social Security Bulletin,* 69(3).

Page, Jeremy, Leslie Hildebrand, Miram Loewenberg, Dawn Phelps, and Natalie Justh. 2009. *Data Dictionary for the Ticket Research File.* Washington, DC: Mathematica Policy Research.

Peikes, Deborah and Ankur Sarin. 2005. *State Partnership Initiative: Synthesis of Impact Estimates Generated by the State Project Evaluations.* Washington, DC: Mathematica Policy Research.

Porter, Alice, James Smith, Alydia Payette, Tim Tremblay, and Peter Burt. 2009. *SSDI $1 for $2 Benefit Offset Pilot Demonstration: Vermont Pilot Final Report*. Prepared for the U.S. Social Security Administration. Waterbury, VT: Vermont Division of Vocational Rehabilitation.

Prante, Gerald. 2008. *State-Local Tax Burdens Dip As Income Growth Outpaces Tax Growth*. Tax Foundation Special Report No. 163. http://www.taxfoundation.org/files/sr163.pdf.

Robins, Philip K. and R.W. West. 1980. "Labor Supply Response Over Time," Journal of Human Resources 15 (4), pp. 524- 544.

Schochet, Peter Z. 2008. Technical Methods Report: Guidelines for Multiple Testing in Impact Evaluations (NCEE 2008-4018). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Social Security Administration. 2010. *The Annual Statistical Report on the Social Security Disability Insurance Program*, 2009. Baltimore, MD: SSA.

Stapleton, David C., Gina A. Livermore, Craig Thornton, Bonnie L. O'Day, Robert R. Weathers II, Krista Harrison, So O'Neil, Emily S. Martin, David C. Wittenburg, and Debra L. Wright. 2008. *Ticket to Work at the Crossroads: A Solid Foundation with an Uncertain Future*. Report submitted to the Social Security Administration. Washington, DC: Mathematica Policy Research.

Stapleton, David, Stephen Bell, David Whittenburg, Brian Sokol, and Debi McInnis. 2010a. *BOND Final Design Report*. Report to the Social Security Administration, December 3, 2010.

Stapleton, David C., Todd C. Honeycutt, and Bruce D. Schechter. 2010b. "Closures are the Tip of the Iceberg: Exploring the Variation in State Vocational Rehabilitation Program Exits After Service Receipt." *Journal of Vocational Rehabilitation*, 32(1), 61-76.

Stuart, Charles E. 1984. "Welfare Cost Per Dollar of Additional Tax Revenue in the United States." *American Economic Review* 74(3), pp. 452-462.

Thornton, Craig V., Gina A. Livermore, Thomas M. Fraker, David C. Stapleton, Bonnie L. O'Day, Timothy W. Silva, David C. Wittenburg, Robert R. Weathers II, Nanette J. Goodman, Emily S. Martin, Jesse Gregory, and Debra L. Wright. 2007. "Evaluation of the Ticket to Work Program: Assessment of Implementation and Impacts During 2002-2004." Washington, DC: Mathematica Policy Research and Cornell University Institute for Policy Research, May.

Tuma, N. 2001. *Approaches to Evaluating Induced Entry into a New SSDI Program with a $1 Reduction in Benefits for each $2 in Earnings*. Manuscript, Stanford University.

Weathers, Robert R. II, Jeffrey Hemmeter and Michael Wiseman. 2010. The SSDI Benefit Offset Experiment: "Landing the Pilots." Baltimore, MD: Social Security Administration.

Appendix A.   BOND Implementation Fidelity Assessment Tools

Exhibit A-1.   Implementation of Recruitment and Enrollment Process

	Adheres to BOND Model	Sometimes Does Not Adhere to Model	Does Not Adhere to Model
STAGE 1 IMPLEMENTATION			
Community Outreach: Reaches out to local advocacy groups, service providers and general public about BOND. Distributes written materials about demonstration and provides a single point of contact in BOND team.			
Beneficiary Outreach: Sent letters to T1 subjects. Made telephone calls to beneficiaries who appear to be working based on SSA data. Staff informs treatment group about: (1) BOND website, (2) BOND call center, (3) BOND site offices.			
STAGE 2 IMPLEMENTATION			
Community Outreach: Reaches out to local advocacy groups, service providers and general public about BOND. Distributes written materials about demonstration and provides a single point of contact in BOND team.			
Beneficiary Outreach: Sent letters to solicitation pool subjects. Call beneficiaries who do not respond, multiple times if needed.			
Enrollment: BOND team describes the demonstration to subjects, provides examples of how it works and how other benefits may be affected. Holds meetings in BOND site office or alternative locations for those with travel restrictions due to health and/or distance.			
Informed Consent: BOND team informs subjects that their participation is voluntary. Asks them to sign a consent form.			
Complete Baseline Survey: BOND team administers baseline interview to participants during or shortly after enrollment interview.			
Random Assignment: BOND team randomly assigns volunteers to one of three groups (two treatment and one control). Notifies subjects of random assignment results orally and in writing. Informs T21 subjects about WIC services. Informs T22 subjects about EWIC services. Notifies EWICs as often as daily about beneficiaries assigned to T22 group. Informs T21 and T22 groups about: (1) BOND website, (2) BOND call center, (3) BOND site offices. Efforts made to avoid contamination or crossovers.			
Overall Assessment of Implementation:			
Recommendations for Improving Implementation Fidelity:			

Exhibit A-2.   Implementation of Benefit Offset Processes

	Adheres to BOND Model	Sometimes Does Not Adhere to Model	Does Not Adhere to Model
Reporting Earnings: Treatment subjects (Stages 1 and 2) and Stage 2 control subjects have access to accurate and useful resources for reporting earnings.*			
Processing Earnings Reports: Timely and efficient process in place for BOND staff to collect, review, and submit subjects' earnings to SSA.*			
Determining TWP Status: Timely and efficient process in place for completing TWP determinations for treatment and C1 and C2 subjects.			
Benefits Adjustments: Timely and efficient process in place for timely and accurate benefits adjustments for treatment groups (Stages 1 and 2).			
Benefits Reconciled: Timely and accurate process in place for reconciling benefits for treatment subjects based on IRS earnings reports and earnings and IRWE documentation from the beneficiary.			
Notifications: Timely process in place to clearly notify treatment beneficiary of all actions and C1 and C2 subjects of all TWP-related actions. BOND site office and call centers help clarify actions for beneficiaries.			
Appeals: Timely and efficient processes in place for treatment and C2 subjects to file appeals of notifications at BOND site office or with call center staff. Timely and efficient process in place for reviewing and ruling on appeals.			
Overall Assessment of Implementation:			
Recommendations for Improving Implementation Fidelity:			

* C2 subjects will report earnings for TWP determinations only.

Exhibit A-3.   Implementation of EWIC and WIC Counseling Services

	Adheres to BOND Model	Sometimes Does Not Adhere to Model	Does Not Adhere to Model
Outreach and Engagement: EWIC counselors are in contact with beneficiaries by phone or by other methods on a monthly basis.			
Barriers and Needs Assessment: EWIC counselors administer a employment counseling guided interview, which contains employment relevant information on daily living, lifestyle, health, and identifies employment barriers and needs, such as transportation, child care, skill deficits, interviewing, etc.			
Skills and Transfer of Skills (TSA) Analysis: EWIC counselors use two on-line vocational assessment systems— OASYS and Career Scope—to conduct aptitude and skills assessment and TSA, match skills and abilities to occupational requirements, and provide wage data.			
Employment Planning: EWIC counselors assist beneficiaries develop vocational goals and tailor services to overcome barriers, meet needs, and reach goals. Plan documented in the Employment Support Plan (ESP).			
Service Coordination: The EWIC counselor provides the services specified in the ESP or provide referrals to the local network of service partners. EWIC monitors the services provided by partners to completion.			
Pre-employment Skills Development: Referrals and coordination with organizations that teach, e.g., interviewing skills, resume preparation, appropriate dress and comportment, expectations of employers. (Includes on-site seminars and sessions that can be hosted by EWICs, but will utilize technical experts from other organizations.)			
Employment Services Partners: EWIC organizations partner with organizations that provide employers with information on the potential to hire beneficiaries. Counselors follow up with beneficiary to ensure they are linked with organizations that conduct employer development activities.			
Job Placement: EWIC refers and coordinates with organizations that provide outreach with employers to identify opportunities, connect beneficiary with potential employers, and accompany individual to job interview (as needed). EWIC follow up with beneficiary to ensure services are being provided by appropriate organizations.			
Job Retention: EWIC counselors continue to support the beneficiary and employer in achieving post-placement success. EWIC follows up with beneficiary to ensure services are being provided by appropriate organizations.			
Overall Assessment of Implementation:			
Recommendations for Improving Implementation Fidelity:			

Appendix B.   Methodological Details and Table Shells for Net Impact Analysis

B.1   Outcome Data Sources

Exhibit B.1-1 presents the data sources for the outcomes shown in **Exhibit 6-1**. Because they concern the same set of hypotheses, the row stubs are identical between the two exhibits; the new information in **Exhibit B.1-1** is the check marks for the different data sources that will provide the information needed to test each of the hypotheses. Multiple data sources are indicated for some outcomes. In these cases, each will be analyzed in its own right.

Exhibit B.1-1.   Data Sources for Beneficiary Outcomes (* = measured on quarterly or continuous basis)

	Data Source					
	Administrative Data			**Survey Data**		
Outcome	**SSA**	**CMS**	**RSA**	**Stage 1 Follow-Up**	**Stage 2 Interim**	**Stage 2 Follow-Up**
Employment-Related Outcomes						
Percent Employed	√*			√	√	√*
Mean Annual Earnings	√*			√	√	√*
Percent with Annual Earnings Above BYA	√*			√	√	√*
Percent with Annual Earnings Above 2 X BYA	√*			√	√	√*
Percent with Annual Earnings Above 3 X BYA	√*			√	√	√*
TWP Entry	√*					
TWP Completion	√*					
TWP Months Used	√*					
Use of Grace Period	√*					
Use of IRWE	√*					
Amount of IRWE	√*					
In Self-employed Job				√		√

Any Fringe benefits? (9 types)
   Health care insurance
   Dental benefits
   Sick days with pay
   Disability benefits
   Workers' compensation
   Paid vacation
   Free or low-cost childcare
   Transportation assistance
   Pension or retirement benefits
				√		√

	Data Source					
	Administrative Data			**Survey Data**		
Outcome	**SSA**	**CMS**	**RSA**	**Stage 1 Follow-Up**	**Stage 2 Interim**	**Stage 2 Follow-Up**

Work-related expenses
    Commuting-related expenses
    Licenses, tools, and uniforms
    Child Care
				√		√

Hours per week working in a paid job				√	√	√
Hourly wage rate				√	√	√
Weeks per year working				√	√	√
Months worked since RA				n/a	√	√
Personal goals include getting a job, moving up in a job, or learning a new job				√		√
Receipt of Earned Income Tax Credit				√		√
Benefits						
SSDI Benefits	√*					
SSDI Receipt	√*					
Number of SSDI Overpayments	√*					
Mean Size of SSDI Overpayments	√*					
SSI Benefits	√*					
SSI Receipt	√*					
Medicaid Benefits		√*				
Medicaid Enrollment		√*				
Medicare Benefits		√*				
Medicare Enrollment		√*				
SNAP Benefits				√		√
SNAP Receipt				√		√
Public Assistance/Welfare (TANF) Benefits				√		√
Workers' Compensation Benefits				√		√
Private Disability Insurance Benefits				√		√
Unemployment (UI) Benefits				√		√
Training-Related Outcomes						
Number of TTW Tickets Assigned	√*					
Amount of TTW Ticket Payments	√*					
Use of Vocational Rehabilitation Service			√*	√	√	√
Use of Benefit Counseling Services					√	
Highest grade or year of school				√		√
Any job-related schooling or training since RA				√		√
Total weeks of job-related schooling or training				√		√

	Data Source					
	Administrative Data			**Survey Data**		
Outcome	**SSA**	**CMS**	**RSA**	**Stage 1 Follow-Up**	**Stage 2 Interim**	**Stage 2 Follow-Up**
Use of employment supports since RA:						
Work or job assessment						
Help to find job						
Training to learn new job or skill						
Advice about modifying job or workplace						
On-the-job training, coaching or support services				√	√	√
Personal care assistance						
Transportation assistance						
Help in keeping a job						
Any kind of assistive device						
Other						
Currently full-time student				√		√
Currently part-time student				√		√
Health and Functioning Outcomes (Quality of Life)						
Health status (global)				√	√	√
Mortality Rate	√					
Physical health and functioning						
Health limits respondent in moderate activities						
Accomplished less as a result of physical health (past 4 weeks)				√		√
Limited in kind of work or regular daily activities as a result of physical health (past 4 weeks)						
Emotional health and functioning (past 4 weeks)						
Accomplished less as a result of emotional problems						
Did not to work or activities as carefully as usual as a result of emotional problems				√		√
Pain interfered with normal work (including both work outside the home and housework)						
Emotional well-being in past 4 weeks (Composite of calm and peaceful, lot of energy, downhearted and depressed)				√		√
Nights stayed in hospital in past 12 months				√		√
Days that illness or injury kept respondent in bed more than half the day in past 12 months				√		√

Outcome	Data Source					
	Administrative Data			Survey Data		
	SSA	CMS	RSA	Stage 1 Follow-Up	Stage 2 Interim	Stage 2 Follow-Up
Material Hardship Outcomes (Quality of Life)						
Household Income				√		√
Percent with Household Income Below Poverty Line						
Time in past 12 months when respondent did not meet all essential expenses.				√		√
Any time in past 12 months when: Did not pay full amount of rent or mortgage / Was evicted for not paying rent or mortgage / Could not pay full amount of utility bills / Had utility turn off service because of nonpayment / Had telephone or cell company disconnect because of nonpayment				√		√
In past 12 months: Not eat enough because could not afford enough food / Ever not eat for a whole day because not enough money for food				√		√
Number of people in household				√		√

Note: * = measured on quarterly or continuous basis. All other outcomes are measured as of the day of survey interview or over a brief retrospective period just prior to the interview (e.g., "the last month")

B.2   Additional Impact Table Shells

Exhibit B.2-1.   Stage 1 Impacts of BOND on Self-Reported Earnings and Employment at 36 Months After RA: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Annualized Earnings			
Annualized Earnings at 36 Months After RA	$nnn	$nnn	$nnn (nnn)
Employment			
Working for Pay or Profit at 36 Months After RA	0.nn	0.nn	0.nn (0.nn)

Source: BOND Stage 1 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T1 = 5,000; C1 = 5,000].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

**Exhibit B.2-2.   Stage 2 Impacts of BOND on Self-Reported Earnings and Employment at 12 Months and 36 Months After RA:
T21 Versus C2, T22 Versus C2, T22 Versus T21**

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Annualized Earnings at 12 Months After RA						
Annualized Earnings at 12 Months After RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Employment at 12 Months After RA						
Working for Pay or Profit at 12 Months After RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Total Earnings						
Total Earnings in Years 1-3 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Time Path of Earnings						
Earnings in Year 1 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in Year 2 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in Year 3 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Employment						
Any Employment in Years 1-3 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Time Path of Employment						
Any Employment in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in Year 2 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in Year 3 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source for 12-Month Outcomes: BOND Stage 2 12-Month Interim Survey.

Source for 36-Month Outcomes: BOND Stage 2 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T21 = 4,800; T22 = 3,000; C2 = 4,800].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-3.   Stage 1 Impacts of BOND on Earnings above BOND Yearly Amount (BYA): T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Earnings Above BYA			
Number of Years with Earnings Above BYA in RA Year and 4 Years Following	n.nn	n.nn	n.nn (n.nn)
Time Path of Earnings Above BYA			
Earnings Above BYA in Year before RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above BYA in RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above BYA in First Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above BYA in Second Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above BYA in Third Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above BYA in Fourth Year after RA Year	0.nn	0.nn	0.nn (0.nn)

Source: Social Security Administrative Earnings records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-4.   Stage 2 Impacts of BOND on Earnings above BOND Yearly Amount (BYA): T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Earnings Above BYA						
Number of Years with Earnings Above BYA in RA Year and 4 Years Following	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Time Path of Earnings Above BYA						
Earnings Above BYA in Year before RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above BYA in RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above BYA in First Year after RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above BYA in Second Year after RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above BYA in Third Year after RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: Social Security Administrative Earnings records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-5. Stage 1 Impacts of BOND on Earnings Above 2x and 3x BOND Yearly Amount (BYA): T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Earnings Above 2xBYA			
Number of Years with Earnings Above 2xBYA in RA Year and 4 Years Following	n.nn	n.nn	n.nn (n.nn)
Time Path of Earnings Above 2xBYA			
Earnings Above 2xBYA in Year before RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above 2xBYA in RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above 2xBYA in First Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above 2xBYA in Second Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above 2xBYA in Third Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above 2xBYA in Fourth Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above 3xBYA			
Number of Years with Earnings Above 3xBYA in RA Year and 4 Years Following	n.nn	n.nn	n.nn (n.nn)
Time Path of Earnings Above 3xBYA			
Earnings Above 3xBYA in Year before RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above 3xBYA in RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above 3xBYA in First Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above 3xBYA in Second Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above 3xBYA in Third Year after RA Year	0.nn	0.nn	0.nn (0.nn)
Earnings Above 3xBYA in Fourth Year after RA Year	0.nn	0.nn	0.nn (0.nn)

Source: Social Security Administrative Earnings records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-6.   Stage 2 Impacts of BOND on Earnings Above 2x and 3x BOND Yearly Amount (BYA): T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Earnings Above 2xBYA						
Number of Years with Earnings Above 2xBYA in RA Year and 4 Years Following	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Time Path of Earnings Above 2xBYA						
Earnings Above 2xBYA in Year before RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above 2xBYA in RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above 2xBYA in First Year after RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above 2xBYA in Second Year after RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above 2xBYA in Third Year after RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above 3xBYA						
Number of Years with Earnings Above 3xBYA in RA Year and 4 Years Following	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Time Path of Earnings Above 3xBYA						
Earnings Above 3xBYA in Year before RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above 3xBYA in RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above 3xBYA in First Year after RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above 3xBYA in Second Year after RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Earnings Above 3xBYA in Third Year after RA Year	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: Social Security Administrative Earnings records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-7.   **Stage 1 Impacts of BOND on Trial Work Period (TWP) Entry and Completion: T1 Versus C1**

Outcome	Treatment Mean	Control Mean	Impact Estimate
TWP Entry			
Any TWP Entry in Years 1-6 after RA	0.nn	0.nn	0.nn (0.nn)
Time Path of TWP Entry			
TWP Entry in Year 1 after RA	0.nn	0.nn	0.nn (0.nn)
TWP Entry in Year 2 after RA	0.nn	0.nn	0.nn (0.nn)
TWP Entry in Year 3 after RA	0.nn	0.nn	0.nn (0.nn)
TWP Entry in Year 4 after RA	0.nn	0.nn	0.nn (0.nn)
TWP Entry in Year 5 after RA	0.nn	0.nn	0.nn (0.nn)
TWP Entry in Year 6 after RA	0.nn	0.nn	0.nn (0.nn)
TWP Completion			
TWP Completion in Years 1-6 after RA	0.nn	0.nn	0.nn (0.nn)
Time Path of TWP Completion			
TWP Completion in Year 1 after RA	0.nn	0.nn	0.nn (0.nn)
TWP Completion in Year 2 after RA	0.nn	0.nn	0.nn (0.nn)
TWP Completion in Year 3 after RA	0.nn	0.nn	0.nn (0.nn)
TWP Completion in Year 4 after RA	0.nn	0.nn	0.nn (0.nn)
TWP Completion in Year 5 after RA	0.nn	0.nn	0.nn (0.nn)
TWP Completion in Year 6 after RA	0.nn	0.nn	0.nn (0.nn)

Source: Social Security Administrative TRF records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-8.   Stage 2 Impacts of BOND on Trial Work Period (TWP) Entry and Completion: T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
TWP Entry						
Any TWP Entry in Years 1-6 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Time Path of TWP Entry						
TWP Entry in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
TWP Entry in Year 2 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
TWP Entry in Year 3 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
TWP Entry in Year 4 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
TWP Entry in Year 5 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
TWP Entry in Year 6 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
TWP Completion						
TWP Completion in Years 1-6 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Time Path of TWP Completion						
TWP Completion in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
TWP Completion in Year 2 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
TWP Completion in Year 3 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
TWP Completion in Year 4 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
TWP Completion in Year 5 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
TWP Completion in Year 6 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: Social Security Administrative TRF records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-9.   Stage 1 Impacts of BOND on Trial Work Period (TWP) Months Used and Number of Months Engaged in SGA: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
TWP Months Used			
TWP Months Used in Years 1-6 after RA	n.nn	n.nn	n.nn (n.nn)
Time Path of TWP Months Used			
TWP Months Used in Year 1 after RA	n.nn	n.nn	n.nn (n.nn)
TWP Months Used in Year 2 after RA	n.nn	n.nn	n.nn (n.nn)
TWP Months Used in Year 3 after RA	n.nn	n.nn	n.nn (n.nn)
TWP Months Used in Year 4 after RA	n.nn	n.nn	n.nn (n.nn)
TWP Months Used in Year 5 after RA	n.nn	n.nn	n.nn (n.nn)
TWP Months Used in Year 6 after RA	n.nn	n.nn	n.nn (n.nn)

Source: Social Security Administrative TRF records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-10. Stage 2 Impacts of BOND on Trial Work Period (TWP) Months Used and Number of Months Engaged in SGA:
T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
TWP Months Used						
TWP Months Used in Years 1-6 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Time Path of TWP Months Used						
TWP Months Used in Year 1 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
TWP Months Used in Year 2 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
TWP Months Used in Year 3 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
TWP Months Used in Year 4 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
TWP Months Used in Year 5 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
TWP Months Used in Year 6 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)

Source: Social Security Administrative TRF records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-11. Stage 1 Impacts of BOND on Use of Grace Period: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Use of Grace Period			
Any Use of Grace Period in Years 1-6 after RA	0.nn	0.nn	0.nn (0.nn)
Time Path of Use of Grace Period			
Use of Grace Period in Year 1 after RA	0.nn	0.nn	0.nn (0.nn)
Use of Grace Period in Year 2 after RA	0.nn	0.nn	0.nn (0.nn)
Use of Grace Period in Year 3 after RA	0.nn	0.nn	0.nn (0.nn)
Use of Grace Period in Year 4 after RA	0.nn	0.nn	0.nn (0.nn)
Use of Grace Period in Year 5 after RA	0.nn	0.nn	0.nn (0.nn)
Use of Grace Period in Year 6 after RA	0.nn	0.nn	0.nn (0.nn)

Source: Social Security Administrative TRF records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-12. Stage 2 Impacts of BOND on Use of Grace Period:
T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Use of Grace Period						
Any Use of Grace Period in Years 1-6 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Time Path of Use of Grace Period						
Use of Grace Period in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Use of Grace Period in Year 2 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Use of Grace Period in Year 3 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Use of Grace Period in Year 4 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Use of Grace Period in Year 5 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Use of Grace Period in Year 6 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: Social Security Administrative TRF records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-13. Stage 1 Impacts of BOND on Use and Amount of Impairment Related Work Expenses (IRWE): T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Use of IRWE			
Any Use of IRWE in Years 1-6 after RA	0.nn	0.nn	0.nn (0.nn)
Time Path of Use of IRWE			
Use of IRWE in Year 1 after RA	0.nn	0.nn	0.nn (0.nn)
Use of IRWE in Year 2 after RA	0.nn	0.nn	0.nn (0.nn)
Use of IRWE in Year 3 after RA	0.nn	0.nn	0.nn (0.nn)
Use of IRWE in Year 4 after RA	0.nn	0.nn	0.nn (0.nn)
Use of IRWE in Year 5 after RA	0.nn	0.nn	0.nn (0.nn)
Use of IRWE in Year 6 after RA	0.nn	0.nn	0.nn (0.nn)
Amount of IRWE			
Total Amount of IRWE in Years 1-6 after RA	$nnn	$nnn	$nnn (nnn)
Time Path of Use of IRWE			
Amount of IRWE in Year 1 after RA	$nnn	$nnn	$nnn (nnn)
Amount of IRWE in Year 2 after RA	$nnn	$nnn	$nnn (nnn)
Amount of IRWE in Year 3 after RA	$nnn	$nnn	$nnn (nnn)
Amount of IRWE in Year 4 after RA	$nnn	$nnn	$nnn (nnn)
Amount of IRWE in Year 5 after RA	$nnn	$nnn	$nnn (nnn)
Amount of IRWE in Year 6 after RA	$nnn	$nnn	$nnn (nnn)

Source: Social Security Administrative TRF records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-14. Stage 2 Impacts of BOND on Use and Amount of Impairment Related Work Expenses (IRWE): T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Use of IRWE						
Any Use of IRWE in Years 1-6 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Time Path of Use of IRWE						
Use of IRWE in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Use of IRWE in Year 2 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Use of IRWE in Year 3 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Use of IRWE in Year 4 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Use of IRWE in Year 5 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Use of IRWE in Year 6 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Amount of IRWE						
Total Amount of IRWE in Years 1-6 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Time Path of Use of IRWE						
Amount of IRWE in Year 1 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Amount of IRWE in Year 2 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Amount of IRWE in Year 3 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Amount of IRWE in Year 4 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Amount of IRWE in Year 5 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Amount of IRWE in Year 6 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)

Source: Social Security Administrative TRF records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

**Exhibit B.2-15. Stage 1 Impacts of BOND on Employment with Fringe Benefits:
        T1 Versus C1**

Outcome	Treatment Mean	Control Mean	Impact Estimate
Employment with Fringe Benefits			
Has Current Job That Offers Any Fringe Benefits	0.nn	0.nn	0.nn (0.nn)
Specific Fringe Benefits			
Has Current Job That Offers Health Care Insurance	0.nn	0.nn	0.nn (0.nn)
Has Current Job That Offers Dental Benefits	0.nn	0.nn	0.nn (0.nn)
Has Current Job That Offers Sick Days With Pay	0.nn	0.nn	0.nn (0.nn)
Has Current Job That Offers Disability Benefits	0.nn	0.nn	0.nn (0.nn)
Has Current Job That Offers Workers' Compensation	0.nn	0.nn	0.nn (0.nn)
Has Current Job That Offers Paid Vacation	0.nn	0.nn	0.nn (0.nn)
Has Current Job That Offers Free or Low-cost Childcare	0.nn	0.nn	0.nn (0.nn)
Has Current Job That Offers Transportation Assistance	0.nn	0.nn	0.nn (0.nn)
Has Current Job That Offers Pension or Retirement Benefits	0.nn	0.nn	0.nn (0.nn)

Source: BOND Stage 1 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T1 = 5,000; C1 = 5,000].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

**Exhibit B.2-16. Stage 2 Impacts of BOND on Employment with Fringe Benefits:
        T21 Versus C2, T22 Versus C2, T22 Versus T21**

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Employment with Fringe Benefits						
Has Current Job That Offers Any Fringe Benefits	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Specific Fringe Benefits						
Has Current Job That Offers Health Care Insurance	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Has Current Job That Offers Dental Benefits	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Has Current Job That Offers Sick Days With Pay	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Has Current Job That Offers Disability Benefits	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Has Current Job That Offers Workers' Compensation	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Has Current Job That Offers Paid Vacation	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Has Current Job That Offers Free or Low-cost Childcare	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Has Current Job That Offers Transportation Assistance	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Has Current Job That Offers Pension or Retirement Benefits	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: BOND Stage 2 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T21 = 4,800; T22 = 3,000; C2 = 4,800].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-17. Stage 1 Impacts of BOND on Self-Paid Work-Related Expenses:
T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Self-Paid Work-Related Expenses ($) At 36 Months After RA			
Commuting-Related Expenses	$nnn	$nnn	$nnn (nnn)
Licenses, Tools, and Uniforms Expenses	$nnn	$nnn	$nnn (nnn)
Child Care Expenses	$nnn	$nnn	$nnn (nnn)
Special Equipment Expenses	$nnn	$nnn	$nnn (nnn)
Personal Assistance Services	$nnn	$nnn	$nnn (nnn)

Source: BOND Stage 1 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T1 = 5,000; C1 = 5,000].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-18. Stage 2 Impacts of BOND on Self-Paid Work-Related Expenses:
     T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Self-Paid Work-Related Expenses ($) At 36 Months After RA						
Commuting-Related Expenses	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Licenses, Tools, and Uniforms Expenses	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Child Care Expenses	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Special Equipment Expenses	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Personal Assistance Services	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)

Source: BOND Stage 2 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T21 = 4,800; T22 = 3,000; C2 = 4,800].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-19. Stage 1 Impacts of BOND on Employment-Related Outcomes: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Employment			
Currently Working For Pay or Profit at 36 Months After RA	0.nn	0.nn	0.nn (0.nn)
Weeks Per Year Working at Current or Main Job at 36 Months After RA	nn.n	nn.n	nn.n (nn.n)
Hours Per Week Working at Current or Main Job at 36 Months After RA	nn.n	nn.n	nn.n (nn.n)
Wage Rate			
Wage Rate Per Hour at Current or Main Job at 36 Months After RA	$nnn	$nnn	$nnn (nnn)
Self-Employment			
Self-Employed at Current or Main Job at 36 Months After RA	0.nn	0.nn	0.nn (0.nn)
Attitudes Toward Employment			
Personal Goals Include Getting a Job (If Not Working For Pay), Moving Up in a Job, or Learning New Job Skills	0.nn	0.nn	0.nn (0.nn)
Of Those Working For Pay, Satisfaction With Current or Main Job	0.nn	0.nn	0.nn (0.nn)

Source: BOND Stage 1 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T1 = 5,000; C1 = 5,000].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-20. Stage 2 Impacts of BOND on Employment-Related Outcomes:
T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Employment at 12 Months After RA						
Currently Working For Pay or Profit	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Weeks Per Year Working at Current or Main Job	nn.n	nn.n	nn.n	nn.n (nn.n)	nn.n (nn.n)	nn.n (nn.n)
Hours Per Week Working at Current or Main Job	nn.n	nn.n	nn.n	nn.n (nn.n)	nn.n (nn.n)	nn.n (nn.n)
Months Worked Since RA	nn.n	nn.n	nn.n	nn.n (nn.n)	nn.n (nn.n)	nn.n (nn.n)
Wage Rate at 12 Months After RA						
Wage Rate Per Hour at Current or Main Job	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Self-Employment at 12 Months After RA						
Self-Employed at Current or Main Job	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Employment at 36 Months After RA						
Currently Working For Pay or Profit	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Weeks Per Year Working at Current or Main Job	nn.n	nn.n	nn.n	nn.n (nn.n)	nn.n (nn.n)	nn.n (nn.n)
Hours Per Week Working at Current or Main Job	nn.n	nn.n	nn.n	nn.n (nn.n)	nn.n (nn.n)	nn.n (nn.n)
Wage Rate at 36 Months After RA						
Wage Rate Per Hour at Current or Main Job	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Self-Employment at 36 Months After RA						
Self-Employed at Current or Main Job	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Attitudes Toward Employment at 36 Months After RA						
Personal Goals Include Getting a Job (If Not Working For Pay), Moving Up in a Job, or Learning New Job Skills	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Of Those Working For Pay, Satisfaction With Current or Main Job	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source for 12-Month Outcomes: BOND Stage 2 12-Month Interim Survey.

Source for 36-Month Outcomes: BOND Stage 2 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T21 = 4,800; T22 = 3,000; C2 = 4,800].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-21. Stage 1 Impacts of BOND on Number and Mean Size of SSDI Overpayments: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Number of SSDI Overpayments			
Total Number of SSDI Overpayments in Years 1-6 after RA	n.nn	n.nn	n.nn (n.nn)
Time Path of Number of SSDI Overpayments			
# of SSDI Overpayments in Year 1 after RA	n.nn	n.nn	n.nn (n.nn)
# of SSDI Overpayments in Year 2 after RA	n.nn	n.nn	n.nn (n.nn)
# of SSDI Overpayments in Year 3 after RA	n.nn	n.nn	n.nn (n.nn)
# of SSDI Overpayments in Year 4 after RA	n.nn	n.nn	n.nn (n.nn)
# of SSDI Overpayments in Year 5 after RA	n.nn	n.nn	n.nn (n.nn)
# of SSDI Overpayments in Year 6 after RA	n.nn	n.nn	n.nn (n.nn)
Mean Size of SSDI Overpayments			
Mean Size of SSDI Overpayments in Years 1-6 after RA	$nnn	$nnn	$nnn (nnn)
Time Path of Mean Size of SSDI Overpayments			
Mean Size of SSDI Overpayments in Year 1 after RA	$nnn	$nnn	$nnn (nnn)
Mean Size of SSDI Overpayments in Year 2 after RA	$nnn	$nnn	$nnn (nnn)
Mean Size of SSDI Overpayments in Year 3 after RA	$nnn	$nnn	$nnn (nnn)
Mean Size of SSDI Overpayments in Year 4 after RA	$nnn	$nnn	$nnn (nnn)
Mean Size of SSDI Overpayments in Year 5 after RA	$nnn	$nnn	$nnn (nnn)
Mean Size of SSDI Overpayments in Year 6 after RA	$nnn	$nnn	$nnn (nnn)

Source: Social Security Administrative TRF records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-22. Stage 2 Impacts of BOND on Number and Mean Size of SSDI Overpayments: T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Number of SSDI Overpayments						
Total Number of SSDI Overpayments in Years 1-6 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Time Path of Number of SSDI Overpayments						
# of SSDI Overpayments in Year 1 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
# of SSDI Overpayments in Year 2 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
# of SSDI Overpayments in Year 3 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
# of SSDI Overpayments in Year 4 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
# of SSDI Overpayments in Year 5 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Mean Size of SSDI Overpayments						
Mean Size of SSDI Overpayments in Years 1-5 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Time Path of Mean Size of SSDI Overpayments						
Mean Size of SSDI Overpayments in Year 1 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Mean Size of SSDI Overpayments in Year 2 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Mean Size of SSDI Overpayments in Year 3 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Mean Size of SSDI Overpayments in Year 4 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Mean Size of SSDI Overpayments in Year 5 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)

Source: Social Security Administrative TRF records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes:　*** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-23. Stage 1 Impacts of BOND on SSI Benefits and Receipt: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Total SSI Benefits			
Total SSI Benefits in Years 1-6 after RA	$nnn	$nnn	$nnn (nnn)
Time Path of SSI Benefits			
SSI Benefits in Year 1 after RA	$nnn	$nnn	$nnn (nnn)
SSI Benefits in Year 2 after RA	$nnn	$nnn	$nnn (nnn)
SSI Benefits in Year 3 after RA	$nnn	$nnn	$nnn (nnn)
SSI Benefits in Year 4 after RA	$nnn	$nnn	$nnn (nnn)
SSI Benefits in Year 5 after RA	$nnn	$nnn	$nnn (nnn)
SSI Benefits in Year 6 after RA	$nnn	$nnn	$nnn (nnn)
SSI Receipt			
Number of Years With Any SSI Receipt in Years 1-6 after RA	n.nn	n.nn	n.nn (n.nn)
Time Path of SSI Receipt			
Any SSI Receipt in Year 1 after RA	0.nn	0.nn	0.nn (0.nn)
Any SSI Receipt in Year 2 after RA	0.nn	0.nn	0.nn (0.nn)
Any SSI Receipt in Year 3 after RA	0.nn	0.nn	0.nn (0.nn)
Any SSI Receipt in Year 4 after RA	0.nn	0.nn	0.nn (0.nn)
Any SSI Receipt in Year 5 after RA	0.nn	0.nn	0.nn (0.nn)
Any SSI Receipt in Year 6 after RA	0.nn	0.nn	0.nn (0.nn)

Source: Social Security Administrative TRF records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-24. Stage 2 Impacts of BOND on SSI Benefits and Receipt:
T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Total SSI Benefits						
Total SSI Benefits in Years 1-6 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Time Path of SSI Benefits						
SSI Benefits in Year 1 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
SSI Benefits in Year 2 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
SSI Benefits in Year 3 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
SSI Benefits in Year 4 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
SSI Benefits in Year 5 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
SSI Benefits in Year 6 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
SSI Receipt						
Number of Years With Any SSI Receipt in Years 1-6 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Time Path of SSI Receipt						
Any SSI Receipt in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any SSI Receipt in Year 2 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any SSI Receipt in Year 3 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any SSI Receipt in Year 4 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any SSI Receipt in Year 5 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any SSI Receipt in Year 6 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: Social Security Administrative TRF records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-25. Stage 1 Impacts of BOND on Medicaid Benefits: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Total Medicaid Benefits			
Total Medicaid Benefits in Years 1-3 after RA	$nnn	$nnn	$nnn (nnn)
Time Path of Medicaid Benefits			
Medicaid Benefits in Year 1 after RA	$nnn	$nnn	$nnn (nnn)
Medicaid Benefits in Year 2 after RA	$nnn	$nnn	$nnn (nnn)
Medicaid Benefits in Year 3 after RA	$nnn	$nnn	$nnn (nnn)
Medicaid Enrollment			
Number of Years with Medicaid Enrollment in Years 1-3 after RA	n.nn	n.nn	n.nn (n.nn)
Time Path of Medicaid Enrollment			
Any Medicaid Enrollment in Year 1 after RA	0.nn	0.nn	0.nn (0.nn)
Any Medicaid Enrollment in Year 1 after RA	0.nn	0.nn	0.nn (0.nn)
Any Medicaid Enrollment in Year 1 after RA	0.nn	0.nn	0.nn (0.nn)

Source: CMS Administrative records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-26. Stage 2 Impacts of BOND on Medicaid Benefits:
T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Total Medicaid Benefits						
Total Medicaid Benefits in Years 1-3 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Time Path of Medicaid Benefits						
Medicaid Benefits in Year 1 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Medicaid Benefits in Year 2 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Medicaid Benefits in Year 3 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Medicaid Enrollment						
Number of Years with Medicaid Enrollment in Years 1-3 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Time Path of Medicaid Enrollment						
Any Medicaid Enrollment in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Medicaid Enrollment in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Medicaid Enrollment in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: CMS Administrative records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-27. Stage 1 Impacts of BOND on Medicare Benefits: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Total Medicare Benefits			
Total Medicare Benefits in Years 1-5 after RA	$nnn	$nnn	$nnn (nnn)
Time Path of Medicare Benefits			
Medicare Benefits in Year 1 after RA	$nnn	$nnn	$nnn (nnn)
Medicare Benefits in Year 2 after RA	$nnn	$nnn	$nnn (nnn)
Medicare Benefits in Year 3 after RA	$nnn	$nnn	$nnn (nnn)
Medicare Benefits in Year 4 after RA	$nnn	$nnn	$nnn (nnn)
Medicare Benefits in Year 5 after RA	$nnn	$nnn	$nnn (nnn)
Medicare Enrollment			
Number of Years with Medicare Enrollment in Years 1-5 after RA	n.nn	n.nn	n.nn (n.nn)
Time Path of Medicare Enrollment			
Any Medicare Enrollment in Year 1 after RA	0.nn	0.nn	0.nn (0.nn)
Any Medicare Enrollment in Year 2 after RA	0.nn	0.nn	0.nn (0.nn)
Any Medicare Enrollment in Year 3 after RA	0.nn	0.nn	0.nn (0.nn)
Any Medicare Enrollment in Year 4 after RA	0.nn	0.nn	0.nn (0.nn)
Any Medicare Enrollment in Year 5 after RA	0.nn	0.nn	0.nn (0.nn)

Source: CMS Administrative records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

**Exhibit B.2-28. Stage 2 Impacts of BOND on Medicare Benefits:
T21 Versus C2, T22 Versus C2, T22 Versus T21**

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Total Medicare Benefits						
Total Medicare Benefits in Years 1-5 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Time Path of Medicare Benefits						
Medicare Benefits in Year 1 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Medicare Benefits in Year 2 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Medicare Benefits in Year 3 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Medicare Benefits in Year 4 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Medicare Benefits in Year 5 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Medicare Enrollment						
Number of Years with Medicare Enrollment in Years 1-5 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Time Path of Medicare Enrollment						
Any Medicare Enrollment in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Medicare Enrollment in Year 2 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Medicare Enrollment in Year 3 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Medicare Enrollment in Year 4 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Medicare Enrollment in Year 5 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: CMS Administrative records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-29. Stage 1 Impacts of BOND on Household Income and Public Benefits at 36 Months After RA: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
SNAP (Food Stamps)			
SNAP (Food Stamps) Benefits in Last Month	$nnn	$nnn	$nnn (nnn)
SNAP (Food Stamps) Receipt in Last Month	0.nn	0.nn	0.nn (0.nn)
Public Assistance/Welfare (TANF)			
Public Assistance/Welfare (TANF) Benefits in Last Month	$nnn	$nnn	$nnn (nnn)
Workers' Compensation			
Workers' Compensation Benefits in Last Month	$nnn	$nnn	$nnn (nnn)
Private Disability Insurance			
Private Disability Insurance Benefits in Last Month	$nnn	$nnn	$nnn (nnn)
Unemployment Insurance (UI)			
Unemployment Insurance (UI) Benefits in Last Month	$nnn	$nnn	$nnn (nnn)

Source: BOND Stage 1 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T1 = 5,000; C1 = 5,000].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-30. Stage 2 Impacts of BOND on Household Income and Public Benefits at 36 Months After RA: T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
SNAP (Food Stamps)						
SNAP (Food Stamps) Benefits in Last Month	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
SNAP (Food Stamps) Receipt in Last Month	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Public Assistance/Welfare (TANF)						
Public Assistance/Welfare (TANF) Benefits in Last Month	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Workers' Compensation						
Workers' Compensation Benefits in Last Month	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Private Disability Insurance						
Private Disability Insurance Benefits in Last Month	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Unemployment Insurance (UI)						
Unemployment Insurance (UI) Benefits in Last Month	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)

Source: BOND Stage 2 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T21 = 4,800; T22 = 3,000; C2 = 4,800].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-31. Stage 1 Impacts of BOND on Number of TTW Tickets Assigned and Amount of TTW Ticket Payments: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
TTW Tickets Assigned			
Total Number of TTW Tickets Assigned in Years 1-6 after RA	n.nn	n.nn	n.nn (n.nn)
Time Path of TTW Tickets Assigned			
Number of TTW Tickets Assigned in Year 1 after RA	n.nn	n.nn	n.nn (n.nn)
Number of TTW Tickets Assigned in Year 2 after RA	n.nn	n.nn	n.nn (n.nn)
Number of TTW Tickets Assigned in Year 3 after RA	n.nn	n.nn	n.nn (n.nn)
Number of TTW Tickets Assigned in Year 4 after RA	n.nn	n.nn	n.nn (n.nn)
Number of TTW Tickets Assigned in Year 5 after RA	n.nn	n.nn	n.nn (n.nn)
Number of TTW Tickets Assigned in Year 6 after RA	n.nn	n.nn	n.nn (n.nn)
Amount of TTW Ticket Payments			
Total Amount of TTW Ticket Payments in Years 1-6 after RA	$nnn	$nnn	$nnn (nnn)
Time Path of TTW Ticket Payments			
Amount of TTW Ticket Payments in Year 1 after RA	$nnn	$nnn	$nnn (nnn)
Amount of TTW Ticket Payments in Year 2 after RA	$nnn	$nnn	$nnn (nnn)
Amount of TTW Ticket Payments in Year 3 after RA	$nnn	$nnn	$nnn (nnn)
Amount of TTW Ticket Payments in Year 4 after RA	$nnn	$nnn	$nnn (nnn)
Amount of TTW Ticket Payments in Year 5 after RA	$nnn	$nnn	$nnn (nnn)
Amount of TTW Ticket Payments in Year 6 after RA	$nnn	$nnn	$nnn (nnn)

Source: Social Security Administrative TRF records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-32. Stage 2 Impacts of BOND on Number of TTW Tickets Assigned and Amount of TTW Ticket Payments: T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
TTW Tickets Assigned						
Total Number of TTW Tickets Assigned in Years 1-6 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Time Path of TTW Tickets Assigned						
# of TTW Tickets Assigned in Year 1 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
# of TTW Tickets Assigned in Year 2 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
# of TTW Tickets Assigned in Year 3 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
# of TTW Tickets Assigned in Year 4 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
# of TTW Tickets Assigned in Year 5 after RA	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Amount of TTW Ticket Payments						
Total Amount of TTW Payments in Years 1-5 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Time Path of TTW Ticket Payments						
Amount of TTW Payments in Year 1 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Amount of TTW Payments in Year 2 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Amount of TTW Payments in Year 3 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Amount of TTW Payments in Year 4 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Amount of TTW Payments in Year 5 after RA	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)

Source: Social Security Administrative TRF records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-33. Stage 1 Impacts of BOND on Use of Vocational Rehabilitation Services: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Use of Vocational Rehabilitation Services			
Any Use of Vocational Rehabilitation Services in Years 1-4 after RA	0.nn	0.nn	0.nn (0.nn)
Number of Years With Any Use of Vocational Rehabilitation Services in Years 1-4 after RA	n.nn	n.nn	n.nn (n.nn)
Time Path of Use of Vocational Rehabilitation Services			
Any Use of Vocational Rehabilitation Services in Year 1 after RA	0.nn	0.nn	0.nn (0.nn)
Any Use of Vocational Rehabilitation Services in Year 2 after RA	0.nn	0.nn	0.nn (0.nn)
Any Use of Vocational Rehabilitation Services in Year 3 after RA	0.nn	0.nn	0.nn (0.nn)
Any Use of Vocational Rehabilitation Services in Year 4 after RA	0.nn	0.nn	0.nn (0.nn)

Source: Rehabilitation Services Administration (RSA) records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-34. Stage 2 Impacts of BOND on Use of Vocational Rehabilitation Services:
T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Use of Vocational Rehabilitation Services in Years 1-4 after RA						
Any Use of Vocational Rehabilitation Services	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Number of Years With Any Use of Vocational Rehabilitation Services	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
Time Path of Use of Vocational Rehabilitation Services						
Any Use of Voc. Rehab. Services in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Use of Voc. Rehab. Services in Year 2 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Use of Voc. Rehab. Services in Year 3after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Use of Voc. Rehab. Services in Year 4 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: Rehabilitation Services Administration (RSA) records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

**Exhibit B.2-35. Stage 1 Impacts of BOND on Training-Related Outcomes:
T1 Versus C1**

Outcome	Treatment Mean	Control Mean	Impact Estimate
Job-Related Schooling or Training			
Use of Vocation Rehabilitation Service in Years 1-3 after RA (survey response)	0.nn	0.nn	0.nn (0.nn)
Highest Grade or Year of School	nn.n	nn.n	nn.n (nn.n)
Any Job-Related Schooling or Training in 3 Years after RA	0.nn	0.nn	0.nn (0.nn)
Total Weeks of Job-Related Schooling or Training in 3 Years after RA	nn.n	nn.n	nn.n (nn.n)
Student Status			
Currently a Full-Time Student at 3 Years after RA	0.nn	0.nn	0.nn (0.nn)
Currently a Part-Time Student at 3 Years after RA	0.nn	0.nn	0.nn (0.nn)
Use of Employment Supports in 3 Years After RA			
Work or Job Assessment	0.nn	0.nn	0.nn (0.nn)
Help to Find Job	0.nn	0.nn	0.nn (0.nn)
Training to Learn New Job or Skill	0.nn	0.nn	0.nn (0.nn)
Advice About Modifying Job or Workplace	0.nn	0.nn	0.nn (0.nn)
On-The-Job Training, Coaching, or Support Services	0.nn	0.nn	0.nn (0.nn)
Personal Care Assistance	0.nn	0.nn	0.nn (0.nn)
Transportation Assistance	0.nn	0.nn	0.nn (0.nn)
Help in Keeping a Job	0.nn	0.nn	0.nn (0.nn)
Any Kind of Assistive Device	0.nn	0.nn	0.nn (0.nn)
Other	0.nn	0.nn	0.nn (0.nn)

Source: BOND Stage 1 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T1 = 5,000; C1 = 5,000].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-36. Stage 2 Impacts of BOND on Employment-Related Outcomes at 12 Months After RA: T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Job-Related Schooling or Training						
Use of Vocation Rehabilitation Service in Year 1 after RA (survey response)	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Benefits Counseling Services Received in Year 1 after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Use of Employment Supports in Year 1 After RA						
Work or Job Assessment	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Help to Find Job	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Training to Learn New Job or Skill	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Advice About Modifying Job or Workplace	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
On-The-Job Training, Coaching, or Support Services	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Personal Care Assistance	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Transportation Assistance	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Help in Keeping a Job	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Kind of Assistive Device	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Other	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source for 12-Month Outcomes: BOND Stage 2 12-Month Interim Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T21 = 4,800; T22 = 3,000; C2 = 4,800].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-37. Stage 2 Impacts of BOND on Employment-Related Outcomes at 36 Months After RA: T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Job-Related Schooling or Training						
Use of Vocation Rehabilitation Service in Years 1-3 after RA (survey response)	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Highest Grade or Year of School	nn.n	nn.n	nn.n	nn.n (nn.n)	nn.n (nn.n)	nn.n (nn.n)
Any Job-Related Schooling or Training in 3 Years after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Total Weeks of Job-Related Schooling or Training in 3 Years after RA	nn.n	nn.n	nn.n	nn.n (nn.n)	nn.n (nn.n)	nn.n (nn.n)
Student Status						
Currently a Full-Time Student at 3 Years after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Currently a Part-Time Student at 3 Years after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Use of Employment Supports in 3 Years After RA						
Work or Job Assessment	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Help to Find Job	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Training to Learn New Job or Skill	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Advice About Modifying Job or Workplace	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
On-The-Job Training, Coaching, or Support Services	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Personal Care Assistance	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Transportation Assistance	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Help in Keeping a Job	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Kind of Assistive Device	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Other	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source for 36-Month Outcomes: BOND Stage 2 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T21 = 4,800; T22 = 3,000; C2 = 4,800].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-38. Stage 1 Impacts of BOND on Health and Functioning Outcomes at 3 Years After RA: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Health Status (Global) at 3 Years After RA			
Health is Excellent	0.nn	0.nn	0.nn (0.nn)
Health is Very Good	0.nn	0.nn	0.nn (0.nn)
Health is Good	0.nn	0.nn	0.nn (0.nn)
Health is Fair	0.nn	0.nn	0.nn (0.nn)
Health is Poor	0.nn	0.nn	0.nn (0.nn)
Physical Health and Functioning			
Health limits respondent "A Lot" in moderate activities	0.nn	0.nn	0.nn (0.nn)
Accomplished Less as a Result of Physical Health in Past 4 Weeks All or Most of the Time	0.nn	0.nn	0.nn (0.nn)
Limited in Kind of Work or Regular Daily Activities by Physical Health in Past 4 Weeks All or Most of the Time	0.nn	0.nn	0.nn (0.nn)
Stayed Overnight in the Hospital in the Past 12 Months	0.nn	0.nn	0.nn (0.nn)
Number of Nights Stayed at Hospital in the Past 12 Months	nn.n	nn.n	nn.n (nn.n)
Days in past 12 months that illness or injury kept respondent in bed more than half the day	nn.n	nn.n	nn.n (nn.n)
Emotional Health and Functioning in Past 4 Weeks			
Accomplished Less as a Result of Emotional Problems All or Most of the Time	0.nn	0.nn	0.nn (0.nn)
Did Not Do Work or Activities As Carefully As Usual as Result of Emotional Problems All or Most of the Time	0.nn	0.nn	0.nn (0.nn)
Pain Interfered With Normal Work (Outside Home and Housework) Extremely or Quite a Bit	0.nn	0.nn	0.nn (0.nn)
Emotional Well-Being (composite scale)	nn.n	nn.n	nn.n (nn.n)

Source: BOND Stage 1 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T1 = 5,000; C1 = 5,000].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-39. Stage 2 Impacts of BOND on Health and Functioning Outcomes at 1 and 3 Years After RA: T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Health Status (Global) at 1 Year After RA						
Health is Excellent	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Health is Very Good	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Health is Good	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Health is Fair	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Health is Poor	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Health Status (Global) at 3 Years After RA						
Health is Excellent	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Health is Very Good	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Health is Good	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Health is Fair	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Health is Poor	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Physical Health and Functioning at 3 Years after RA						
Health limits respondent "A Lot" in moderate activities	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Accomplished Less as a Result of Physical Health in Past 4 Weeks All or Most of the Time	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Limited in Kind of Work or Regular Daily Activities by Physical Health in Past 4 Weeks All or Most of the Time	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Stayed Overnight in the Hospital in the Past 12 Months	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Number of Nights Stayed at Hospital in the Past 12 Months	nn.n	nn.n	nn.n	nn.n (nn.n)	nn.n (nn.n)	nn.n (nn.n)
Days in past 12 months that illness or injury kept respondent in bed more than half the day	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Emotional Health and Functioning in Past 4 Weeks at 3 Years After RA						
Accomplished Less as a Result of Emotional Problems All or Most of the Time	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Did Not Do Work or Activities As Carefully As Usual as Result of Emotional Problems All or Most of the Time	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Pain Interfered With Normal Work (Outside Home and Housework) Extremely or Quite a Bit	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Emotional Well-Being (composite scale)	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source for 12-Month Outcomes: BOND Stage 2 12-Month Interim Survey.

Source for 36-Month Outcomes: BOND Stage 2 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T21 = 4,800; T22 = 3,000; C2 = 4,800].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-40. Stage 1 Impacts of BOND on Mortality Rate: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Mortality Rate			
Mortality Rate in 6 Year Period after RA	0.nn	0.nn	0.nn (0.nn)

Source: Social Security Administrative TRF records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

**Exhibit B.2-41. Stage 2 Impacts of BOND on Mortality Rate:
        T21 Versus C2, T22 Versus C2, T22 Versus T21**

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Mortality Rate						
Mortality Rate in 5 Year Period after RA	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: Social Security Administrative TRF records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

Exhibit B.2-42. Stage 1 Impacts of BOND on Household Income and Material Hardship Outcomes at 3 Years After RA: T1 Versus C1

Outcome	Treatment Mean	Control Mean	Impact Estimate
Household Income			
Household Income in 2013	$nnn	$nnn	$nnn (nnn)
Living Below Poverty Line			
Percent with Household Income Below Poverty Line in 2013	0.nn	0.nn	0.nn (0.nn)
Could Not Meet Household Expenses			
Any time in past 12 months when did not meet all essential expenses	0.nn	0.nn	0.nn (0.nn)
Did not pay full amount of rent or mortgage (any time in past 12 months)	0.nn	0.nn	0.nn (0.nn)
Was evicted for not paying rent or mortgage (any time in past 12 months)	0.nn	0.nn	0.nn (0.nn)
Could not pay full amount of utility bills (any time in past 12 months)	0.nn	0.nn	0.nn (0.nn)
Had utility turn off service because of nonpayment (any time in past 12 months)	0.nn	0.nn	0.nn (0.nn)
Had telephone or cell company disconnect because of nonpayment (any time in past 12 months)	0.nn	0.nn	0.nn (0.nn)
Food Security			
Ever not eat enough in household because could not afford enough food (any time in past 12 months)	0.nn	0.nn	0.nn (0.nn)
Ever not eat for a whole day because not enough money for food (any time in past 12 months)	0.nn	0.nn	0.nn (0.nn)
Size of Household			
Number of people in the household at 36 months after RA	nn.n	nn.n	nn.n (nn.n)

Source: BOND Stage 1 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T1 = 5,000; C1 = 5,000].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

Exhibit B.2-43. Stage 2 Impacts of BOND on Household Income and Material Hardship Outcomes at 3 Years After RA: T21 Versus C2, T22 Versus C2, T22 Versus T21

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Household Income						
Household Income in 2013	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Living Below Poverty Line						
Percent with Household Income Below Poverty Line in 2013	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Could Not Meet Household Expenses						
Any time in past 12 months when did not meet all essential expenses	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Did not pay full amount of rent or mortgage (any time in past 12 months)	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Was evicted for not paying rent or mortgage (any time in past 12 months)	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Could not pay full amount of utility bills (any time in past 12 months)	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Had utility turn off service because of nonpayment (any time in past 12 months)	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Had telephone or cell company disconnect because of nonpayment (any time in past 12 months)	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Food Security						
Ever not eat enough in household because could not afford enough food (any time in past 12 months)	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Ever not eat for a whole day because not enough money for food (any time in past 12 months)	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Size of Household						
Number of people in the household at 36 months after RA	nn.n	nn.n	nn.n	nn.n (nn.n)	nn.n (nn.n)	nn.n (nn.n)

Source for 36-Month Outcomes: BOND Stage 2 36-Month Follow-up Survey.

Sample Sizes: # Respondents [of Attempted Interviews: T21 = 4,800; T22 = 3,000; C2 = 4,800].

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design and adjustment for non-response.

B.3   Analysis Weights

Analysis weights reflecting selection probabilities

The BOND evaluation will use analysis weights in the estimation of program impacts to produce estimates for the national population of SSDI beneficiaries. These weights take account of the differing probabilities of selection into the sample for the different study sites and beneficiary subpopulations.

Analysis weights will be constructed differently for Stage 1 sample members (T1 and C1) than for Stage 2 sample members (T21, T22, and C2). The first component of both sets of analysis weights is the reciprocal of the probability of site selection. As explained in Chapter One, ten SSA area offices were selected as sites for BOND from eight strata, defined by Census Region (Northeast, Midwest, South, or West) and proportion of beneficiaries living in Medicaid Buy-In states (Low or High). A single area office was selected from each stratum except the "South – Low" stratum, from which a total of three area offices were selected as sites.[123] The area offices were selected in each stratum using probability proportional to size systematic sampling, where size is defined as the number of SSDI beneficiaries served by the area office.

The second component of the Stage 1 and 2 analysis weights is the reciprocal of the probability of selection into T1, C1, or the Stage 2 Solicitation Pool. Within BOND sites, random assignment of beneficiaries into these groups will occur within four strata based on distinctions of short-duration beneficiaries (36 months or less) vs. longer-duration beneficiaries (37 months or more) and SSDI-only beneficiaries vs. concurrent beneficiaries. The four strata will thus be: short duration SSDI-only, short duration concurrent, long duration SSDI-only, and long duration concurrent. For the T1 group, short duration beneficiaries will be oversampled such that one-half of the total T1 group will be short-duration beneficiaries.[124] The relative proportions of SSDI-only and concurrent beneficiaries in the T1 group will be at their natural occurring proportions. The much larger C1 group will include at least as many beneficiaries in each of these strata as T1, but will have relatively more long-duration beneficiaries and relatively more concurrent beneficiaries than T1. The Stage 2 Solicitation Pool (from which volunteers will be recruited to form the Stage 2 sample) will have a proportion of short-duration beneficiaries higher than the naturally occurring rate but lower than 50%, and will only include SSDI-only beneficiaries.

Stage 1 Analysis Weights. Stage 1 analysis weights will be constructed separately for administrative data outcomes (e.g., earnings and employment) and for survey data outcomes (e.g., use of counseling services, and health and functioning).

---

[123]   The "South – Low" stratum contains much larger numbers of area offices and beneficiaries than the other strata. Since 3 area offices were selected from this stratum, the first component of all analysis weights for sample members from this stratum will be $\left(\dfrac{N_m}{3N_{mk}} \right)$, rather than $\left(\dfrac{N_m}{N_{mk}} \right)$.

[124]   The proportion of short duration beneficiaries within each site will be the naturally occurring proportion in the site multiplied by a constant (across sites) factor such that the total number of short-duration beneficiaries in T1 across sites is exactly half of T1 (i.e., 40,000 beneficiaries).

For estimating impacts on *administrative* outcomes, each Stage 1 sample member will be assigned an analysis weight given by:

$$w_{1A} = \left(\frac{N_m}{N_{mk}}\right)\left(\frac{N_{mkj}}{N_{mkjg}}\right)$$

where:

- N_m denotes the number of SSDI beneficiaries in stratum m,

- N_{mk} denotes the number of SSDI beneficiaries served by site k within stratum m,

- N_{mkj} denotes the number of SSDI beneficiaries served by site k within stratum m who are from 1 of 4 possible strata based on distinctions of short-duration beneficiaries (36 months or less) vs. longer-duration beneficiaries (37 months or more) and SSDI-only beneficiaries vs. concurrent beneficiaries. Thus, the possible values for j are {Short duration SSDI-only; Short duration concurrent; Long duration SSDI-only; Long duration concurrent}.

- N_{mkjg} denotes the number of SSDI beneficiaries of type j in site k within stratum m who are assigned to group g (T1 or C1).

A sample of 10,000 beneficiaries assigned to the Stage 1 treatment and control groups will be selected for the Stage 1 36-month survey (5,000 from T1 and 5,000 from C1). Prior to selecting the sample, a predictive model of employment will be developed using pre-demonstration data. This model will be applied to the background characteristics of demonstration sample members to identify the "most likely to work" portion of the potential survey sample, which will then be oversampled for the survey. For estimating impacts on *survey* outcomes, each Stage 1 sample member will be assigned a base analysis weight given by:

$$w_{1S} = \left(\frac{N_m}{N_{mk}}\right)\left(\frac{N_{mkj}}{N_{mkjg}}\right)\left(\frac{1}{\Pr(selection\ to\ survey)}\right)$$

where:

- N_m, N_{mk}, and N_{mkj}, and N_{mkjg} are defined as above,

- N_{mkjg} (defined slightly differently than above) denotes the number of SSDI beneficiaries of type j in site k within stratum m who are assigned to group g (T1 or C1), and

- $\Pr(selection\ to\ survey)$ is the probability of being selected into the Stage 1 survey sample.

This base analysis weight will be adjusted for non-response using appropriate weighting classes for adjustment.

Stage 2 Analysis Weights. BOND site staff will recruit beneficiaries in the Stage 2 Solicitation Pool for participation in Stage 2. Those beneficiaries who volunteer for Stage 2 will be randomly assigned to one of three assignment groups (T21, T22, or C2). For estimating impacts on *administrative* outcomes, each Stage 2 sample member will be assigned an analysis weight given by:

$$w_{2A} = \left(\frac{N_m}{N_{mk}} \right) \left(\frac{N_{mkj}}{N_{mkjp}} \right) \left(\frac{N_{mkjv}}{N_{mkjvl}} \right)$$

where:

- N_m, N_{mk}, and N_{mkj} are defined as above,

- N_{mkjp} denotes the number of SSDI beneficiaries of type j in site k within stratum m who are assigned to the Stage 2 Solicitation Pool (p)[125],

- N_{mkjv} denotes the number of SSDI beneficiaries of type j in site k within stratum m who volunteer for Stage 2, and

- N_{mkjvl} denotes the number of SSDI beneficiaries of type j in site k within stratum m who volunteer for Stage 2 and are subsequently assigned to group l (T21, T22, or C2).

It is important to note that the Stage 2 analysis weights *do not* align the weighted totals of the Stage 2 volunteers to represent the entire Stage 2 Solicitation Pool. Only a small percentage of the Solicitation Pool is expected to be interested in volunteering. The Stage 2 analysis weights instead weight up the Stage 2 volunteers to represent those in the U.S. who would have volunteered had they been in the BOND Stage 2 Solicitation Pool.

The Stage 2 Interim and Follow-up surveys will be attempted with all 12,600 volunteers who are randomly assigned to any of the three Stage 2 cells. Therefore, the analysis weight for survey outcomes will not need an additional component for the probability of selection into the survey sample (as the probability of selection is equal to 1 for all Stage 2 sample members). For estimating impacts on survey outcomes, each Stage 2 sample member will be assigned an analysis weight that is simply the Stage 2 administrative weight adjusted for non-response to the survey using appropriate weighting classes for adjustment.

---

[125] The second term in the Stage 2 Analysis weight formula $\left(\dfrac{N_{mkj}}{N_{mkjp}} \right)$ is the inverse of the probability of being assigned to the Solicitation Pool.

B.4   Examples of Subgroup Table Shells

Exhibit B.4-1.   Stage 1 Impacts of BOND on Earnings and Employment for Subgroups of SSDI-Only and Concurrent Beneficiaries: T1 Versus C1

Outcome	Subgroup: SSDI-Only at Baseline			Subgroup: Concurrent Beneficiaries at Baseline		
	Treatment Mean	Control Mean	Impact Estimate	Treatment Mean	Control Mean	Impact Estimate
Total Earnings						
Total Earnings in RA Year and 4 Years Following [†]	$nnn	$nnn	$nnn (nnn)	$nnn	$nnn	$nnn (nnn)
Time Path of Earnings						
Earnings in Year before RA Year	$nnn	$nnn	$nnn (nnn)	$nnn	$nnn	$nnn (nnn)
Earnings in RA Year	$nnn	$nnn	$nnn (nnn)	$nnn	$nnn	$nnn (nnn)
Earnings in First Year after RA Year	$nnn	$nnn	$nnn (nnn)	$nnn	$nnn	$nnn (nnn)
Earnings in Second Year after RA Year	$nnn	$nnn	$nnn (nnn)	$nnn	$nnn	$nnn (nnn)
Earnings in Third Year after RA Year	$nnn	$nnn	$nnn (nnn)	$nnn	$nnn	$nnn (nnn)
Earnings in Fourth Year after RA Year	$nnn	$nnn	$nnn (nnn)	$nnn	$nnn	$nnn (nnn)
Employment						
Any Employment in RA Year and 4 Years Following	0.nn	0.nn	0.nn (0.nn)	0.nn	0.nn	0.nn (0.nn)
Number of Years With Any Employment in RA Year and 4 Years Following	n.nn	n.nn	n.nn (n.nn)	n.nn	n.nn	n.nn (n.nn)
Time Path of Employment						
Any Employment in Year before RA Year	0.nn	0.nn	0.nn (0.nn)	0.nn	0.nn	0.nn (0.nn)
Any Employment in RA Year	0.nn	0.nn	0.nn (0.nn)	0.nn	0.nn	0.nn (0.nn)
Any Employment in First Year after RA Year	0.nn	0.nn	0.nn (0.nn)	0.nn	0.nn	0.nn (0.nn)
Any Employment in Second Year after RA Year	0.nn	0.nn	0.nn (0.nn)	0.nn	0.nn	0.nn (0.nn)
Any Employment in Third Year after RA Year	0.nn	0.nn	0.nn (0.nn)	0.nn	0.nn	0.nn (0.nn)
Any Employment in Fourth Year after RA Year	0.nn	0.nn	0.nn (0.nn)	0.nn	0.nn	0.nn (0.nn)

Source: Social Security Administrative Earnings records.

Sample Sizes: T1 = 80,000; C1 = nnn,nnn.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

[†] = F-test for significant difference in impacts across subgroups is significant at the .05 level.

**Exhibit B.4-2.   Stage 2 Impacts of BOND on Earnings and Employment for Subgroups of Short-Duration and Long-Duration Beneficiaries:
T21 Versus C2, T22 Versus C2, T22 Versus T21**

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Total Earnings						
Total Earnings in RA Year and 3 Years Following: Short-duration at Baseline[†]	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Total Earnings in RA Year and 3 Years Following: Long-duration at Baseline	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Time Path of Earnings						
Earnings in Year before RA Year: Short-duration at Baseline	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in Year before RA Year: Long-duration at Baseline	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in RA Year: Short-duration at Baseline	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in RA Year: Long-duration at Baseline	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in First Year after RA Year: Short-duration at Baseline	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in First Year after RA Year: Long-duration at Baseline	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in Second Year after RA Year: Short-duration at Baseline	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in Second Year after RA Year: Long-duration at Baseline	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in Third Year after RA Year: Short-duration at Baseline	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Earnings in Third Year after RA Year: Long-duration at Baseline	$nnn	$nnn	$nnn	$nnn (nnn)	$nnn (nnn)	$nnn (nnn)
Employment						
Any Employment in RA Year and 3 Years Following: Short-duration at Baseline	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in RA Year and 3 Years Following: Long-duration at Baseline	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
# Years With Any Employment in RA Year and 3 Years Following: Short-duration at Baseline	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)
# Years With Any Employment in RA Year and 3 Years Following: Long-duration at Baseline	n.nn	n.nn	n.nn	n.nn (n.nn)	n.nn (n.nn)	n.nn (n.nn)

Outcome	T21 Mean	T22 Mean	C2 Mean	T21 Vs. C2 Impact Estimate	T22 Vs. C2 Impact Estimate	T22 Vs. T21 Impact Estimate
Time Path of Employment						
Any Employment in Year before RA Year: Short-duration at Baseline	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in Year before RA Year: Long-duration at Baseline	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in RA Year: Short-duration at Baseline	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in RA Year: Long-duration at Baseline	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in First Year after RA Year: Short-duration at Baseline	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in First Year after RA Year: Long-duration at Baseline	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in Second Year after RA Year: Short-duration at Baseline	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in Second Year after RA Year: Long-duration at Baseline	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in Third Year after RA Year: Short-duration at Baseline	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)
Any Employment in Third Year after RA Year: Long-duration at Baseline	0.nn	0.nn	0.nn	0.nn (0.nn)	0.nn (0.nn)	0.nn (0.nn)

Source: Social Security Administrative Earnings records.

Sample Sizes: T21 = 4,800; T22 = 3,000; C2 = 4,800.

Notes: *** = p<.01, ** = p<.05, * = p<.10 in two-tailed t-test. Robust standard errors in parentheses. Impact estimates are regression-adjusted. All statistics are computed using analysis weights reflecting sample design.

[†] = F-test for significant difference in impacts across subgroups is significant at the .05 level.

Short-duration beneficiaries had received SSDI benefits for 36 months or less at baseline. Long-duration beneficiaries had received SSDI benefits for 37 months or more at baseline.

Appendix C.   Loss of Nonmarket Time Resulting from Bond

Economic theory implies that the conceptually appropriate measure of the impact of a government program on any group of individuals is the net change in their consumers' surplus, rather than the net change in their income. If BOND causes increases work hours, the lost nonmarket time that accompanies increases in work hours has value that needs to be counted as a cost when assessing the merits of that program. This point is illustrated in **Exhibit C-1**, which shows a possible response to BOND by a non-concurrent SSDI beneficiary. In the diagram, as explained below, h_G represents hours under the existing SSDI program, h_B hours under BOND, and w* represents the gross hourly wage the beneficiary could potentially receive in the labor market by taking a job.[126] The vertical lines at h_G and h_T respectively represent the hour's equivalents of the SGA and target countable income. For example, if the SGA were $1,000 a month, target countable income (T) $3,400 a month, and w*=$15, then h_G = 67 (=1,000/15) and h_T= 227 (=3,400/15). Thus, were the beneficiary to work more than 67 hours a month, he would no longer qualify for disability payments under the existing SSDI program because he would fall off the SSDI "cliff." However, he would qualify for disability payments under BOND until he worked over 227 hours.

Under the existing SSDI system, an individual who worked 120 hours a month at an hourly wage of $15 would receive a monthly income of $1,800 (= w*h = 15x120), but under BOND the same individual would receive a monthly income of $2,600 (= w*h + .5[T-w*h] - .5T +.5w*h = .5x3,400 + .5x1,800). Because the individual would receive disability payments if he did not work at all, but not if he worked 120 hours, his *net* return to working is far less than his monthly income. For example, if his disability payment in the absence of working, D, were $1,200, then his net return to working 120 hours under the existing SSDI system would be $600 (=$1,800-$1,200 = w*h - D) and his net return per hour or net hourly wage rate, w_S^N, would be $5 (= $600/120 = [w*h_s - D]/11). He would do considerably better under BOND, receiving a net return of $1,400 (= $2,600 - $1,200 = .5T +.5w*h - D) and a net hourly wage rate, w_B^N of $11.67 (= 1,400/120 = [.5T +.5w*h - D]/ h).

In **Exhibit C-1**, w*dab represents the net wage curve under BOND. At hours below h_G, the curve would be flat and w_B^N = w*. At hours between h_G and h_T, the curve would be fall as hours increase and w_B^N = [.5T +.5w*h - D]/ h. The curve falls because (.5T - D)/h is positive, but diminishes in size as h rises. At hours above h_T, the curve rises as hours increase and w_B^N = [w*h - D]/h. The rise occurs because -D/h diminishes as hours increase.

The net wage curve under SSDI is represented by w*dcab. At hours below h_G, the curve is represented in **Exhibit C-1** by w*d and, thus, is identical to net wage curve under BOND. The curve then drops from point d to point c when hours reach h_G and the beneficiary falls off the cliff. At hours above h_G, the curve is represented by cab, rising as hours increase, and the net wage, w_S^N, equals [w*h -D]/h. Thus, at hours above h_T the net wage curve again corresponds to the net wage curve under BOND—that is, above h_T, $w_S^N = w_B^N$ = [w*h - D]/h.

---

[126]   For purposes of simplifying the exposition, we ignore the positive tax system and fringe benefits. We also do not examine the more complex case of concurrent beneficiaries. The loss of nonmarket time for these individuals will be included in the benefit-cost analysis, however.

Exhibit C-1.   SSDI Beneficiary's Compensated Labor Supply Curve
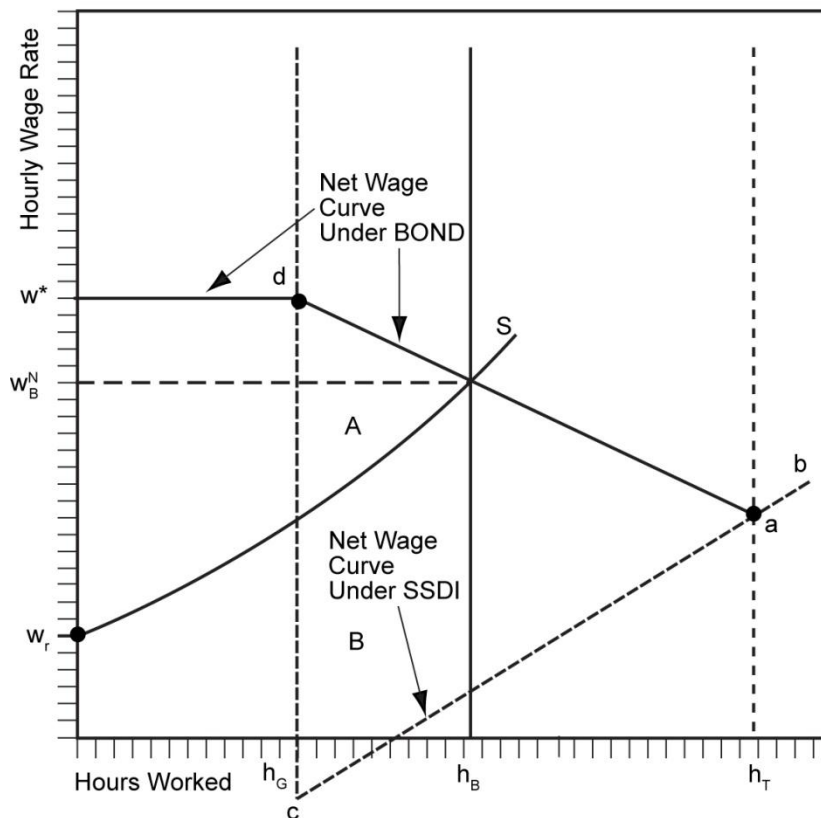
Curve S in **Exhibit C-1** represents the SSDI beneficiary's compensated labor supply curve. S intersects the vertical axis at the reservation wage, w_r, the net wage the individual must receive before he would be willing to work at all. As drawn, S intersects the SSDI net wage curve between points d and c. Thus, the individual would be willing to work h_G hours under SSDI. It also intersects the BOND net wage curve. Hence, the individual would be willing to work h_B hours under BOND. Thus, BOND would increase the number of hours the individual is willing to work from h_G to h_B. It is, of course, possible that the individual's labor supply curve is much steeper than drawn in **Exhibit C-1**, in which case it might intersect curve segment w*d. If so, the individual would be willing to work under SSDI, but fewer than h_G hours and would not respond to BOND. It is also possible that the individual's labor supply curve is very flat, in which case it might intersect curve segment cab. If so, the individual would be willing to work under the existing SSDI program,[127] but would not receive disability insurance payments and. hence, would not be in the demonstration's sample population. Finally, it is also possible that S intersects the vertical axis above w*, and hence $w_r > w*$. If so, S would intersect neither the SSDI net wage curve nor the BOND net wage curve. In this case, the individual would be unwilling to work under either SSDI or BOND and, consequently, not respond to the BOND work incentive. Thus, only segment da of the BOND

---

[127]   Some SSDI beneficiaries who do not work under the existing program or who work fewer than h_G hours may be willing to work more than h_G hours, but unable to find a job that allows them to do so. Under the existing program, these persons would relinquish disability insurance payments once they find employment at above h_G, but they would continue to receive these 'payments under BOND.

net wage curve is relevant for purposes of analyzing labor supply responses to the work incentive provided by the BOND demonstration, and then only if S intersects the vertical axis below w*.

By increasing hours from h_G to h_B, BOND would increase the income of the beneficiary represented in **Exhibit C-1** by areas A + B. However, of this increased income, B is the value of lost nonmarket time and A is the surplus, the actual net benefit, enjoyed by the SSDI beneficiary. Therefore, unless the value of lost nonmarket time is taken into account, the net social benefits of BOND will be overstated. As **Exhibit C-1** implies, this overstatement can account for a substantial share of the total increase in income resulting from BOND. However, as also suggested by the figure, the exact size of the overstatement depends on the value of the reservation wage, the shape of the labor supply curve, and the value of w_B^N.