**THE NEW BENEFICIARY DATA SYSTEM**

**USER'S MANUAL**

**U.S. Department of Health and Human Services**

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1. INTRODUCTION

The New Beneficiary Data System (NBDS), developed by the Social Security Administra­tion over the past decade, is an in­creasingly important source of informa­tion on the changing circum­stances of aged and dis­abled Title II benefi­ciaries. Based initial­ly on a survey of new benefi­cia­ries conducted in 1982, the data set was subse­quent­ly enhanced with informa­tion from administra­tive re­cords, and, in 1991, through followup interviews with survi­vors from the origi­nal survey. All data, of course, meet rigorous standards for the protection of individuals' privacy and confiden­tiality.

Initial Data Base: The New Beneficiary Survey (NBS)

Temple University's Institute for Survey Research and Mathematica Policy Research (ISR/MPR) con­ducted the NBS in late 1982 with a sample repre­senting nearly 2 million persons who had begun receiv­ing Social Secu­rity benefits during a 12-month period in 1980-81. The NBS was a nationally represen­ta­tive, cross-sectional house­hold survey using samples randomly selected from the Social Security Administration's (SSA's) Master Benefi­ciary Record. The NBS contained samples of new SSA benefi­ciaries as retired workers, as disabled workers, as wives, widows, divorced wives, and surviv­ing divorced wives. Personal interviews were complet­ed with three types of benefi­cia­ries: 9,103 retired workers, 5,172 disabled workers, and 2,417 wife or widow benefi­cia­ries.[[1]](#footnote-1) In addition, inter­views were ob­tained from 1,444 aged persons who were covered by Medicare but were not receiving Social Security payments because of high earn­ings.[[2]](#footnote-2)

The NBS inter­views covered a wide range of topics, including demographic characteristics, marital and childbear­ing history, employment history, current income and assets, and health. Selected data were also gath­ered from spouses and added from admin­istrative records. The resulting data set was released as a public-use tape and ana­lyzed in a series of 24 studies conducted by SSA. Findings from these studies were summarized in a recent­ly-pub­lished article.[[3]](#footnote-3)

The New Beneficiary Followup (NBF) Survey

Designed to meet a growing need for longitudinal data on the dynamics of disability and aging, Temple University's ISR conducted the NBF followup interviews through­out 1991 with surviving original sample persons from the NBS and surviving spouses of NBS decedents.

Survival rates -- Survey data and record data as of February 1993 reveal that 24 percent of the original respondents had died by the time of the NBF. The wife or widow beneficiaries had the highest survival rate (84.3 percent), followed by the Medicare-only and retired worker groups (78.9 and 78.1 percent, respectively). Although they were the youngest group, the disabled workers had experienced the highest mortali­ty, with only 69 percent surviving.

Response rates -- Among the surviving NBS respon­dents, 12,128 inter­views were completed, representing a response rate of 87.5 per­cent (Table 1.1). Response rates were remarkably similar across subsamples, ranging from 86 to 89 percent. The NBF also attempted to gather abbrevi­ated informa­tion from the spouses of NBS respon­dents who had died. A total of 1,834 of these addition­al inter­views were completed-- 1,495 with widows and 339 with widowers.

Topics -- The questionnaire for the followup survey was designed with an emphasis on measuring changes over time. It updated the profile of economic circumstances obtained in the NBS, and added or expanded sections dealing with health, family con­tacts, and post-retire­ment employment. The interviews also explored major changes in life circumstances that might underlie chang­es in economic status (for example, death of a spouse, epi­sodes of hospitalization, and changes of resi­dence). In addition, disabled workers were asked about their efforts to return to work, experiences with rehabili­tation services, and knowledge of Social Security work incentive provisions.

Early findings -- Findings from the NBF were presented in a series of brief notes, in the Fall, 1993, and Spring, 1994, editions of the Social Securi­ty Bul­le­tin. More exten­sive analyses will follow.

Linking Administrative Data

Since the 1982 survey, selected information on the NBS respondents has been compiled periodically from Social Security, Supplemen­tal Security Income (SSI), and Medicare records. These administrative data--which can be linked to the survey data--make it possible to ana­lyze changes in NBS respondents' covered earnings, cash bene­fits, participation in the SSI program and health expenses.

Access to the NBDS

The NBDS consists of two waves of survey data (the NBS and the NBF) and associated administrative data. The data are arranged in four files. One file contains the 1982 NBS (wave 1) interviews. The NBF (wave 2) interviews are contained in two files: one file of surviving NBS respondents and one file of surviving spouses of NBS decedents. A fourth file contains the administrative data. The NBDS is available from the National Archive of Comput­er­ized Data on Aging or the Social Security Administration. In the near future the NBDS will also be available on the INTERNET. Please address requests for data to:

National Archive of Computerized Data on Aging, The Inter-university Consortium for Political and Social Research, Member Services, P.O. Box 1248, Ann Arbor, Michigan, 48106-1248, Telephone (313) 763-5010; or

Jeff Shapiro, Social Security Administration, Office of Research and Statistics, Program Analysis Staff, 4301 Connecticut Ave., NW, Suite 207, Washington, DC 20008, Telephone (202) 282-7113 or the Office of the Associate Commissioner for Research and Statistics, Social Security Administration, 6401 Security Boulevard, Baltimore, MD 21235, Telephone (410) 965-2841.

**For further information on the New Beneficiary Data System, contact:** Howard M. Iams, Ph.D., Social Security Administration, Office of Research and Statistics, Pro­gram Analysis Staff, 4301 Connecti­cut Ave., NW, Suite 207, Washington, DC 20008 (202-282-7092) or the Office of the Associate Commissioner for Research and Statistics (410-965-2841).

2.  THE NBDS UNIVERSE

2.0 Introduction

The NBDS universe is defined by the 1982 NBS universe and is the focus of this section of the User's Manual. The 1991 NBF interviewed survivors from the 1982 NBS. Survivors include those who were NBS original sample persons and spouses of deceased sample persons. About 24 percent of original sample persons had died by the time of the NBF.

2.1 The MBR Listing

The goal of the new beneficiary portion of the NBS was to represent the situations of living noninstitutionalized persons in late 1982 (October‑December) who had begun receiving retire­ment or disability benefits under the Social Security program for the time period between mid‑1980 and mid‑1981.  The goal of the nonbene­ficiary portion of the survey was to provide compara­ble information about persons in late 1982 who were at least aged 65, but who had not retired.  Because of cost consider­ations, the NBS was restricted to the contiguous 48 United States and the District of Columbia.

SSA initially created two listings from SSA's Master Beneficiary Record (MBR):  a listing of new beneficiaries in a recent 12‑month period; and a listing of nonretired, nonbeneficiaries aged 65 and older shortly before the sur­vey.  The first listing, drawn in March, 1982, identified persons who first received cash benefits based on an individual earnings record as retired workers, wives, widows, divorced wives or surviving divorced wives for the time period between June, 1980, and May, 1981, and persons who first received cash benefits for a disability between July, 1980, and June, 1981.  The second listing, drawn in July, 1982, identified all insured workers aged 65‑71 who were entitled to Medicare and retired‑worker benefits but who had not received cash benefits.

2.2. Beneficiary Categories

The size of the initial universe of new beneficiaries selected from the MBR differs for several reasons from counts of new benefit awards that are regularly published in the Social Security Bulletin and its Supple­ment.  First, persons may re­ceive more than one benefit award if they are entitled to more than one type of benefit or if they shift from one benefit category to another.  Second, timing of benefit awards does not always coincide with the timing of first payable benefits, especially in the case of retired workers.[[4]](#footnote-4) For the NBS, the general criterion for selecting new beneficiaries from the MBR was to allow each person only one chance of selection; when his/her first benefit became payable either because of retire­ment (in the case of retired workers), because of disability (in the case of disabled workers), or because of old age (in the case of aged wives, widows, divorced wives, and surviving divorced wives).  For the NBS, persons who shift from one of the above types of benefits to another are not usually counted as new beneficiaries when they shift to a second benefit category.  Using this criterion, the beneficiary categories include the groups de­scribed below.

2.2.1.  Retired Workers

This group consists of individuals aged 62 and over receiv­ing retired‑worker benefits based on their own work record (including persons who are dually entitled to retired‑worker benefits and to a partial supplemental benefit as a spouse or survivor).[[5]](#footnote-5) It includes retired‑worker beneficiaries who may have received benefits as dependents or survivors, or disabled workers who subsequently recovered and later entered the benefit rolls as new retired workers during the NBS sample period.  This category excludes disabled workers converting to retired workers at age 65.

2.2.2.  Disabled Workers

This group consists of individuals aged 18 to 64 receiving Social Security disabled‑worker benefits.  It includes workers with a first payment for a new period of disability entitlement, even though they may have received prior benefits as disabled workers, spouses, or survivors.  Persons who shift from retired‑worker to disabled‑worker benefits at ages 62‑64 are not included, as they are included in the retired‑worker catego­ry.

2.2.3.  Spouses

Wives. This category consists of women aged 62 and over who receive benefits solely based on a retired or disabled husband's work record.  Women dually entitled to retired‑worker benefits and to a partial supple­ment as a wife beneficiary are not included, as they are included in the retired‑worker catego­ry.  The wives category includes wives with prior benefit re­ceipt in a nonaged dependent or survivor category and excludes wives who have previously received benefits as retired workers.

Widows. This category consists of widow beneficiaries aged 60 or over whose first old-age benefits are based solely on a deceased husband's work record.  It includes widows with prior benefit receipt as young mothers with dependents or as disabled workers. It excludes widows with dual enti­tlement as retired workers but does include widows who previous­ly received benefits.

Divorced Wives. This category is identical to the wives category above except that a divorced wife's benefits are based on the work record of a former husband.

Surviving Divorced Wives. This category is identical to the widows category except that the surviving divorced wife's benefits are based on the work record of a former husband who is deceased.

2.3.  The Nonretired Category

The nonretired, or Medicare‑only, group consists of persons aged 65 to 71 in July, 1982, who were entitled to Medicare and to retired‑worker benefits, but who had not yet received retired-worker bene­fits because they were not yet retired.  Their benefit payments generally were in suspended status because they had earnings that could cause their benefits to be withheld under the Social Security earnings test.  Under the earnings test applica­ble to persons aged 65‑71 in 1982, $1 in annual benefits was withheld for each $2 in annual earnings above $6,000.

This nonretired, or Medicare‑only group, was included in the survey for comparison with retired‑worker beneficiaries.  The age range of the Medicare‑only group is comparable to that of the retired‑worker beneficiary category.  When retired‑worker beneficiaries began to receive benefits at age 62‑72 in June, 1980 through May, 1981, the Medicare‑only group was aged 63‑70.[[6]](#footnote-6)

Because of the way in which the groups were specified, the Medicare‑only group cannot be combined with the new beneficia­ries to represent a meaningful universe.

2.4.  Individuals versus Couples

The NBS represents new beneficiaries or nonbeneficiaries as individual respondents.  If the respondent was married and living with a spouse at the time of the interview, the survey obtained information about the spouse and about the joint income and asset holdings of the respondent and spouse.  The husband, the wife, or both could have been selected as primary sample persons, however.  For example, the husband could have been selected as a retired worker, while his wife was selected as a wife beneficiary or as a retired worker.  To examine couples in the NBDS, they should be weighted to compensate for their higher probability of being sampled. (See Section 6.2.4 of this User's Manual.)

2.5. Cleaning the MBR Listing

For the purposes of the NBS, the listings selected by SSA were unclean.  The MBR identifies names, addresses, Social Security numbers, and benefit information.  The MBR includes not only living persons but institu­tionalized and deceased persons who were not wanted for the NBS uni­verse.  The MBR does not identify whether persons are institutionalized and, thus, they could not be eliminated from the listings.  Although the MBR identifies deceased persons who could be eliminated from the listings, additional persons died between extraction and inter­view.  Thus, the initial MBR listing contained persons ineligible for the NBS because of institutionalization or death, and the NBS had to oversample the listings in order to obtain the sample size desired.

  Table 2.1 presents information on the MBR listings, the NBS sample, and the NBS survey universe.  As can be seen in Table 2.l, the total beneficiaries receiving first benefits in the 12‑month selection period and who were alive on the date of the extraction numbered 1,860,347.  The nonbeneficiary population numbered about 257,286 at the date of extrac­tion.  The NBS completed a total of 18,599 interviews.[[7]](#footnote-7)  These interviews represent about 1.8 million new beneficiaries and about a quar­ter of a million nonbeneficiaries who were noninstitutionalized and alive in October to December, 1982.

2.6 The NBF

As discussed in the Introduction to this manual, about 24 percent of the original sample persons had died by the time of the NBF. Wife or widow beneficiaries had the highest survival rate (84.3 percent) followed by Medicare-only and retired worker groups (78.9 and 78.1 percent, respective­ly). Only 69 percent of disabled worker beneficiaries survived to the NBF. During the course of data analysis, several hundred respondents were found to have been selected improperly for the sample because of a prior receipt of benefits. These cases were omitted from the 1991 NBF. (The specific cases are identified by the variable PRIORBEN in the 1982 NBS data file.) The 1991 NBF omitted 416 retired workers, 26 disabled workers, and 21 wife or widow beneficiaries who had been included in the 1982 NBS.

3.  SAMPLING

3.0 Introduction

The 1982 NBS was a nationally representative, cross-section­al house­hold survey using samples randomly selected from SSA's Master Beneficiary Record (MBR). The 1991 NBF reinterviewed the original sample persons in the NBS or surviving spouses of deceased original sample persons in the NBS. Because the NBDS is based on the NBS sampling design, this manual summarizes the NBS sampling procedure.

3.l.  Sample Size

Within the class of new recipients of Social Security benefits, 14 subdomains were targeted for special analyses.  These included eight catego­ries of retired workers subdivided by age and sex, two categories of disabled workers subdivided by sex, wives of retired workers, widows of insured workers, divorced wives of insured workers, and surviving divorced wives of insured workers.  Adding the Medicare beneficiaries who are eligible nonrecipients of Social Security benefits brings to 15 the number of analytic subdomains in the NBS.

The survey objectives called for a national probability sample of 16,350 new beneficiaries of Social Security benefits plus 1,500 Medicare beneficiaries who are eligible for Social Security but do not receive it.  Thus, 17,850 interviews in total were wanted.

In order to meet the objectives of the survey, separate sample sizes were specified for each subdomain.  These are presented in Column 1 of Table 3.l.  Population totals are exhibited in Column 2; this permits the calculation of the ratio of population to sample size as seen in Column 3.

The sampling intervals in Column 3 of Table 3.l. would be appropriate for the NBS if everyone appearing on the universe tape was eligible (e.g., noninstitutionalized and living) and nonresponse did not occur.  Since this was not likely to be the case, higher sampling fractions were calculated as follows.  The desired numbers of interviews were first multiplied by 1.75, and the products were divided into the corresponding population sizes (obtained from SSA) to derive original sampling intervals. These were intended to provide sample sizes 75 percent greater than the specified number of interviews.  A preliminary sample was drawn using these rates of selection.  (See Column 4, Table 3.l.)

Thirty percent of the preliminary sample was then set aside in 10 equal‑sized replicate "reserves" to be used only in case unexpectedly large proportions of sample selections were found to be ineligible for the study, impossible to contact, or un­willing to be interviewed.  The original sampling intervals (Column 4) were therefore 70 percent of the originally computed rates.  This meant that the final sample sizes were (1.75 x .70) = 1.225 times as large as the numbers of interviews needed.  If 81.7 percent of all sample selections provided interviews, the requisite number of interviews would be obtained without use of the reserve sample.  If completion rates were lower than this, random selections could be made from the reserve sample as necessary.

The NBS went into the field with an original sample of 70 percent of that selected using the rates in Column 4 of Table 3.1.  During the course of the survey, one replicate reserve was drawn to supplement the original sample for all but the Medicare subdomain.  The final sampling intervals in the last column of Table 3.1. reflect the use of 10 percent of the reserves for all subdomains except the Medicare-only cases.

3.2.  Identification of the Sampling Frame and Selection Strate­gy­

A major design issue concerned the best choice of sampling frames for the NBS.  A universe tape of beneficia­ries was available for sampling.  When such lists are available, simple random sample designs are attractive.  However, personal interviews were required.  Once the time and expense of travel between interviews was considered, it was clear that a simple random sample was not cost effective.  In consequence, a clus­tered sample was designed.

Given that a cluster sample was desired, the NBS used the Institute for Survey Research/Mathematica Policy Research (ISR/MPR) National Sample of Primary Sampling Units, based on the 1980 Census.  This sampling frame was representative of the populations of the 48 continental states and the District of Columbia and was appropriate both for general population studies and for surveys of special groups such as new Social Security beneficia­ries.

The sampling strategy was to adapt the NBS sample to the ISR/MPR frame by selecting beneficiaries only within the 100 sampling points of the ISR/MPR national sample.  However, before this took place, the 100 sampling points were modified in an objective, well‑defined manner to correspond to clusters of zip code areas encompassing the primary areas.  This allowed the subselection of beneficiaries on the basis of the zip code number associated with their address on the universe tape.

Beneficiaries were then selected with probabilities inverse­ly propor­tional to the primary sampling unit selection within a study subdomain.  The sampling proceeded in two stages:  selection of the ISR/MPR primary sampling units (psu's) and selection of respondents within the ISR/MPR sample of psu's using the MBR.  For all members of a given group h:

1/fh = P:j x P:ihj

where fh is the sampling interval for group h shown in the last column of Table 3.1., P:j is the selection probability of psu j, and P:ihj is the selection probability of individual i in group h and psu j, given that psu j was selected.

Since P:ihj = 1/[fh x P:j], second stage sampling rates varied across groups and psu's.  The fact that overall sampling rates within groups (fh) are equal minimized the likelihood that weights will be needed for within‑group data analysis.  However, the fact that the sample is clustered means that variance calcu­lations must take the clustered nature of the sample into ac­count, and the variances of sample estimates are likely to be somewhat larger than they would be under an assumption of simple random sampling.

The description of psu selection is divided into two phases:

(i) original selection of psu's into the ISR/MPR na­tional sample (Sections 3.3. and 3.4.), and

(ii) modification of psu's to be more suitable for the NBS (Sections 3.5. and 3.6.).

This is followed by a discussion of the selection of respon­dents within sample psu's.  These procedures are discussed in the order in which they occurred during sampling.

3.3.  Defining and Stratifying the Original Primary Sampling Units

Using results from the 1980 and 1970 Censuses of the United States, population projections for 1985 were derived and uti­lized for the creation and selection of the 100 psu national sample.  The projection was a simple extrapolation of growth from that observed in 1970‑1980.  The actual calculation was:

MOS = 1980 population + 1/2 [1980 population ‑ 1970 popula­tion].

With a small amount of rounding, these measures of size (MOS), when summed over all counties, equaled 235 million.

Psu's were defined as follows.  Counties were first subdi­vided into two groups:  1) those which would be included in "self‑representing areas," and 2) the rest of the country.  Self-representing areas were defined as Standard Metropolitan Statistical Areas (SMSAs) or Standard Consolidated Areas (SCAs) with projected populations of two million or more.  There were 18 self‑representing areas, and these included a total projected population of 84.6 million, 36 percent of the national total.

For the rest of the country, primary sampling units were constructed from SMSAs and counties outside SMSAs in one of two ways:  where an SMSA or county had a population of 150,000 or more, it was defined to be a psu; where an

SMSA or county had a smaller population, it was combined with adjacent counties or a nearby SMSA to form psu's which were clusters of counties having populations of 150,000 or more.[[8]](#footnote-8)

A total of 32 strata, each with total projected populations of 4.2 to 5.2 million were created by combining the primary sampling units.  Collec­tively, these strata included a projected population of 150.4 million.  Criteria for creating strata were established with the aim of increasing their homogeneity.  The first two criteria used were region and metropoli­tan/ nonmetropolitan status, and within these categories, strata were defined using one or more of the following variables:  degree of urbaniza­tion, economic growth rates, racial composition, and the proportion of the population which was Hispanic.

A few of these strata included metropolitan psu's having populations of 500,000 or more.  At the other extreme, there were several rural strata where most psu's had populations under 200,000 and where individual psu's included many counties cover­ing a vast land area.  In some cases, individu­al psu's covered over half the nonmetropolitan area of western or plains states.  The next step was to select two psu's from each stratum, which provided a total of 64 nonself‑representing psu's.

3.4.  Selecting Primary Original Sampling Units

The primary sampling units were selected into the sample with proba­bility proportional to size. This can be written as:

P:j = MOSj/stratum size,

where MOSj is the measure of size assigned to a given psu j, and P:j is the probability of psu selection.

The two selections were made independently, or with replace­ment.  As a result, the same psu was selected twice in 2 of 32 strata, which means that there are 64 selections, but 62 actual areas included in the sample.  Within the psu's selected twice, two independent sets of respondent selections were made.  (See Section 3.6.)

3.5.  Modification of the ISR/MPR Primary Sampling Units

There were three modifications of the ISR/MPR primary sampling units:  (1) some of the psu's covering large land areas were reduced in size through another stage of selection; (2) the psu boundaries were redefined according to postal service zip code areas; (3) primary selections were drawn within the self‑representing areas.  These modifications are de­scribed in turn.

3.5.1.  Reducing the Sizes of Some Primary Sampling Units

Two conflicting objectives were faced in specifying primary sampling units for the NBS.  First of all, they should be se­lected with probabili­ties greater than the rates given in Table 3.1.  Should a psu be selected at a lower rate, the implied within‑psu sampling rate for the second stage would be greater than 1.0, which is highly undesirable.  In this case, weights would have to be applied for data analysis which in turn would increase the variances of sample estimates.  The probabilities of selection of psu's (P:j) were all above 1 in 16.5, so the psu's as selected for the ISR/MPR sampling frame satisfied this requirement.  However, subselection within psu's (as described below) caused the probabilities of selection to fall below this amount for a few psu's.

The second objective was that travel distances among select­ed respon­dents not be too great.  For some of the larger psu's, the average distance between respondents would have been very great, which would have increased travel time and, consequently, survey costs.  To reduce travel time, primary sampling units covering vast land areas were subdivided into two or three smaller secondary sampling units (ssu's), each of which had a minimum population of 70,000.  One of these smaller secondary sampling units was selected. This naturally changed the proba­bilities of selection to P:j\* :

P:j\* = P:j x MOSj\*/MOSj,

where MOSj is the total measure of size in psu j and MOSj\* is the sum of the measures of size assigned to the counties included in ssu j.

Another way of saying this would be to write:

P:j\* = MOSj\*/stratum size.

For ease of presentation, ssu's will be called psu's for the remainder of this report.

The new nonself‑representing psu's had probabilities of selection greater than all the fh's given in Table 3.1. in all but a few cases.  There are four groups where implied within psu selection probabilities (P:ihj) are sometimes greater than 1.0:  retired female workers aged 66 and over, disabled workers (both male and female), and divorced wives.  The need to weight the data was minimal, however, and the land area covered by sparsely populated psu's was significantly reduced.  Only a small number of psu's covered large land areas and the populations of these tended to be concentrated in one or two large towns.

3.5.2.  The Redefinition of Primary Sampling Unit Boundaries

The SSA beneficiary record includes complete address infor­mation, supplemented by a county code.  The address information, including a zip code, was likely to be accurate since it was used to send checks, but the county codes might be inaccurate in some cases.  This was especially likely to occur when a benefi­ciary changed address, and the county code was not updated.

As a result, the operational definition of a primary sam­pling unit was altered to be the collection of zip code areas assigned to post offices within psu counties.  The definitions of self‑representing areas were similarly changed.  Because an individual metropolitan psu included both the central and subur­ban counties of SMSAs, psu boundary changes typically occurred in the sparsely populated, rural boundaries of psu's, and did not affect many people.  It is reasonable to assume that these changed bound­aries, on average, moved equivalent numbers of people out of and into the sample psu's.  Changing the opera­tional definition of a psu did not affect its probability of selection, and had only a minimal effect on the size of its population.

By redefining psu's in this fashion, the implementation of the sample design was facilitated considerably.  Sample selec­tion was operationalized by drawing from people who resided in "eligible" zip code areas.

3.5.3.  The Creation and Selection of Primary Sampling Units in Self‑Representing Areas‑

The self‑representing areas in the ISR/MPR national sam­pling frame included 149 counties, some of which, even though they were in large SMSAs, were sparsely populated and located at some distance from population centers.  Because it was specified that random sampling be used within primary selections, it would have increased travel times and distances and, hence, survey costs to have included the entire populations of the 149 coun­ties in the NBS sample.  As a consequence, the zip codes in these counties were subdivided into 77 primary sampling units, stratified into 18 strata, and two selections per stratum were made to provide a total of 36 psu's from the original ISR/MPR self‑representing areas.  Combined with the 64 nonself‑representing psu's, a total of 100 psu's for the entire sample was achieved.

There was no need for the zip code clusters to respect county bound­aries, so they were defined in such a way as to make them heterogeneous with respect to race and income.  In particu­lar, Black areas of central cities were subdivided and the various parts were combined with suburban counties.  To give an example, the city of Philadelphia was subdivided into three parts, one of which was combined with Delaware and Chester Counties, one with Montgomery, and one with Bucks to form three psu's.  Each of these primary sampling units included signifi­cant numbers of central city and suburban, Black and White, affluent and poor populations.

For these 77 psu's, the measures of size, MOSj, assigned were the total numbers of recipients eligible for the 14 sub­groups.  These were simply summed across all 14 categories of beneficiaries (not including Medicare beneficiaries).  The 77 psu's were grouped into strata according to region and the racial composition of beneficiaries.  Two selections per stratum were made, so the probability of psu selection (P:j = MOSj/stratum size) is written in the same way as that for nonself‑representing psu's except that both the MOSj and the stratum size refer to numbers of recipients rather than project­ed populations.

3.6.  Selection of Respondents Within Primary Sampling Units

In order to reduce the effects of clustering on the varianc­es of sample estimates, the beneficiaries were stratified within the psu's.  Stratifiers likely to be related to important NBS variables were employed.  This increased the heterogeneity within psu's of the NBS variables and consequently reduced the increases in variance due to clustering.  Since 14 of 15 subdomains were homogeneous by sex, remaining variables thought to be useful were race, age, and Primary Insurance Amount (PIA), an imperfect indicator of income.  (Sex was the primary stratifier for the Medicare group.)  No information was avail­able to determine Hispanic origin of beneficiaries.  Because the PIA is only an indirect measure of income, it may not be as effective a stratifier as race or age.  The strategy, therefore, was to stratify first by race, then by age, and finally by PIA.  The eight groups of retired workers were stratified only by race and PIA, since these groups were already defined by narrow age ranges.  For the Medicare group, cases were stratified by sex, age, race, and PIA.

The sample was drawn in three steps.  First, "eligible" beneficiaries were extracted from the MBR tape.  A beneficiary was deemed eligible for sample selection if he/she resided in an eligible zip code and was assigned to one of the 15 eligible subdomains in this survey.  Next, the resultant data set was sorted by design variables and stratifiers.  Design variables included psu (i.e., prespecified clusters of zip codes) and sample subdomain (since each had a distinct sampling rate); stratifiers have already been described above.  The sample was then drawn systematically within each psu.  The selection scheme utilized measures of size which were proportional to the overall desired sampling rates for each sample subdomain and inversely proportional to the first stage selection probabil­ity.

As indicated in Section 3.1., the selected sample was partitioned into a "main" and "reserve" sample.  The preliminary or main sample was 70 percent of the original selections.  This was immediately assigned to the field.  The 30 percent reserve sample was randomly split into l0 equal‑sized replicates and held at ISR.  It was to be used if unexpectedly large propor­tions of main sample selections were found ineligible, impossi­ble to contact, or unwilling to be interviewed.  Early survey results suggested that reserve samples be allocated to attain desired sample sizes.  Consequently, one replicate reserve was drawn to supplement the main sample for all subdomains except the Medicare‑only group.

Selection of a beneficiary into the sample did not guarantee eligibil­ity in the NBS universe.  The reasons were threefold.  First, a beneficiary selected into the sample could be deceased by the time a first contact was attempted.  Secondly, a benefi­ciary could have been institutionalized by the time of the first contact.  Finally, the MBR record could be incor­rect.  In this case, no eligible respondent was found at a given address.

3.7.  Sample Results

The sample design yielded 22,434 selections from the uni­verse tape.  Interviews were conducted with 18,599 respondents.  After deleting ineligi­bles from the base, this represented an overall unweighted response rate of 85.9.  Table 3.2. presents the final disposition of the sample as of the 1982 interview by subdomain (i.e., benefi­ciary status).  Column 5 provides the number of persons selected into the sample; entries in this column are the sum of those in Columns 1‑4.

Columns 1‑4 show the final disposition of the sample.  Column 1 displays the number of interviews conducted for each subdomain.  The desired number of interviews was exceeded in the survey for all but Medicare recipients and female retired work­ers aged 66 and over.  The number of interviews conducted in these two subdomains was less than 4 percent below the targeted goal.

Columns 2 and 3 show nonresponse.  Column 2 exhibits the number of known eligibles who were not interviewed.  A selected beneficiary was defined as a "known eligible" if contact was made with the selected person and a set of screening questions was completed.  The screening questions ascertained whether or not the person contacted was, in fact, the selected beneficia­ry.  Also, some information from the MBR for that person was checked for accuracy.  When the screening was not completed (e.g., refus­als, not at home), the eligibility of the selected individual was unknown.  These cases are displayed in Column 3.  Note that the entries in Column 3 are two to three times those of Column 2.  A more detailed account of nonresponse in the NBS is furnished in Section 4.

Finally, Column 4 presents the number of cases found to be ineligible in the New Beneficiary Survey.  (See Section 2 for definition of eligible universe.)  The majority of ineligible cases were identified as deceased or institutionalized benefi­ciaries.  Overall, 3.5 percent of the sample was found to be ineligible.  The incidence of ineligibility varied considerably across subdomains.  The highest rates occurred for Disabled Workers; both male and female disabled workers experienced a 6.6 percent ineligibility rate.  This seems plausible, since the disabled are more likely to be institutionalized or to die than beneficiaries in other subdomains.  The lowest incidence of ineligibility occurred for the Medicare group; their rate was only 0.9 percent.  The ineligibility rates of all other subdomains ranged from 1.2 to 4.5 percent.  In sum, the inci­dence of ineligible beneficiaries in the NBS was negligible and should not affect inferences from the survey.

4.  RESPONSE RATES

4.1 Introduction

The overall response rates were 85.9 percent in the NBS and 87.5 percent in the NBF. A more detailed discussion of the response rates in the two surveys follows.

4.2 The 1982 NBS

A conservative estimate of the overall response rate in the NBS is 85.9 percent.  This assumes that all unscreened beneficia­ries (i.e., eligibility is unknown) are eligible.  (See Section 3.7. for a discussion of eligibility.)  The overall response rate is the product of screening and inter­view response rates.  An overall screening rate of 90.1 percent was attained and the interview rate was 95.3 percent.

Table 4.1. (Column 5) exhibits the overall response rates by sample subdomain.  Response rates ranged from 80 to 89 percent.  The lowest response occurred among retired females aged 66+, while the highest rate was realized by the di­vorced wives group.  As the age of beneficiaries increased, the tendency to respond decreased.  Male benefi­ciaries responded at about the same rate as females.  Generally speaking, the overall response rates were fairly consistent across subdomains.

The NBS achieved a 90.1 percent screening response rate.  Column 2 delineates screening rates by subdomain.  Screening response ranged from about 86 to 94 percent.  Medicare recipi­ents and retired females aged 66 and over had the lowest screen­ing response.  The divorced wives and retired males responded best.  The response rates for screening are also in­versely related to age for retired workers.

The NBS interview response rate was 95.3 percent.  Column 4 presents interview rates by subdomain.  With few exceptions, interview rates were 4 to 7 percentage points higher than screening rates.  The most notable exception regards the Medi­care group, for whom the interview rate was about 9 percentage points higher than the screening rate.  Interview rates ranged from 93 to 96 percent; these rates were quite consistent across sample subdomains.

In concluding, it should be noted that the weighted screen­ing and interview response rates are essentially the same as the unweighted estimates within each of the 15 subdomains.  This is due to the equal probabilities of selection within each subdomain.  Overall, the weighted response rates were almost identical to the unweighted values:  86.0 percent overall re­sponse, 95.4 percent interview response, and 90.1 percent screening response.

4.3 The 1991 NBF

The NBF objective was to measure changes over the decade after first benefit receipt for original sample persons and couples. Accordingly, the NBF reinterviewed original sample persons from the NBS. Because some analysts are interested in the changes experienced by widows, the NBF also interviewed the surviving spouses of original sample persons who died after the NBS. Interviews did not occur when nonmarried original sample persons had died or when both spouses had died.

From the February 1990 and 1991 Master Beneficiary Records (MBR), SSA provided addresses and death dates for NBS cases to Temple University. Temple University assigned interviewers for cases that were not identified as dead in the 1991 MBR. Over time, the SSA date of death became increasingly inaccurate. Interviewers identi­fied 138 nonmarried respondents who had died, 560 respondents and their spouses who had died, 50 deceased respondents with divorced spouses who knew nothing about the deceased spouse and 24 deceased respondents whose surviving spouse could not be found.

The wife or widow beneficiaries had the highest survival rates (84.3 percent), followed by the Medicare-only and retired worker groups (78.9 percent and 78.1 percent respectively). Although they were the youngest group, the disabled workers experienced the highest mortality, with only 69 percent surviv­ing. Overall, data reveal that 24 percent of the original sample persons had died by the time of the NBF.

Among the surviving NBF respondents, 12,128 inter­views were completed representing a response rate of 87.5 percent (Table 4.2). Response rates were very similar across subsamples, ranging from 85 to 89 percent. The NBF contacted 1,380 original sample persons without completing inter­views, primarily because of refusals. Another 331 original sample persons could not be located and 18 were not interviewed for other reasons.

The NBF gathered abbreviated information from spouses of NBS original sample persons who had died. A total of 1,834 of these additional inter­views were completed: 1,495 with widows and 339 with widowers. Interviews were not conducted about 2,445 decedents.

5. DATA PROCESSING

5.0 Introduction

Data processing procedures were similar for the NBS and NBF. Temple University's Institute for Survey Research (ISR) was responsible in both surveys for check-in recordkeeping, editing interviews for complete­ness, open ended coding, and processing validation letters for completed interviews. Mathematica Policy Research (MPR) was responsible for computer processing and consistency checks of the NBS. ISR was responsible for all data processing of the NBF.

5.1 Check-in Procedures

As soon as an interview was received by the Check-in Department, the identity of the sample person interviewed was verified in the NBS and a check of whether screening procedures had been followed correctly was done in the NBS. In both surveys, the question­naire was checked for complete­ness. If the criteria for a valid interview were met, the completed questionnaire was then assigned to editing or coding. The 1982 NBS case number was used in NBF field opera­tions.

An important step in the initial check-in procedure was to mail a validation letter to each respondent. The respondent was asked to answer the questions in the letter and then to return it in a postage-paid envelope to ISR. The answers to the questions asked in the validation letter were keyed during the check-in process. Later these answers were compared with the returned validation letters and any discrepancy between the two sets of answers was checked out by the Field staff.

5.2 Edit Procedures

Edit procedures in the NBS and NBF differed somewhat. In the NBS detailed edits were conducted for the first 5 inter­views and 10 percent of remaining interviews by each interview­er. In the NBF detailed edits were conducted on the first three interviews. All first interviews were given top priority. Procedures for these questionnaires called for the editor to check the interview thoroughly and to note on a tri-part evalua­tion form all errors and omissions. Any missing data detected at this stage was to be retrieved by the interviewer. A primary purpose of this process was to alert the interviewer to any errors that had been made and any instructions that needed to be reviewed. If it appeared that an interviewer needed additional training, the appropriate field administrator was informed so that steps were taken to provide the needed instruction.

The same procedures used with priority interviews were followed with the remainder of completed interviews with these exceptions: 1) missing data were retrieved only for those items that had been designated as critical by the project officer, and 2) in the NBF, the data retriev­al was handled in-house by telephone interviewing staff. If a questionnaire had critical items missing, any other missing information would be obtained if possible. Throughout the study, the Field staff was informed whenever it appeared that an interviewer needed to be contacted regarding a problem with one or more interviews. Using criteria defined in the evaluation form, a rating was assigned to each edited NBF questionnaire to indicate the editor's judgment of the overall quality, These ratings were made available to the Field staff to help when any questions arose regarding the quality of an interviewer's work.

In addition to evaluating the interviewer's performance and checking for missing data, editors were responsible for other tasks. These included coding relationships and locations; recoding, whenever possible, "other specify" responses into appropriate existing codes; and converting interest given in percentages into numeric amounts.

Quality control procedures consisted of checking the work of the edit staff and alerting them to any mistakes or omissions on their part. A check edit was initially conducted by supervisors and later by the most experienced editors. This second edit was performed on nearly all of the interviews.

5.3 Coding/Check Coding Procedures

The coding staff was responsible for assigning codes from the 1980 Alphabetical Index of Industries and Occupations to the responses given to the industry and occupation questions and coding selected "other specify" and open end questions. In coding the NBF, if inconsistencies were found in the data that had not been detected in the original edit, the questionnaire was given to the most skilled of the telephone interviewing staff to obtain clarification from the respondent.

All coding was check coded. Check coding was performed initially by supervisors and used as an additional training tool. Later most of the check coding was performed by other coders, selected on the basis of experience and quality of their work.

5.4 Data Entry

NBS data were key entered at MPR using an "intelligent" data entry system. As the data were entered, prespecified checks were made for illegal code errors. Key operators were notified of errors as they were entered. The error could be corrected or flagged for later cleaning as required. Key verification by a second operator was also performed.

NBF data were keyed using ISR's CATI data entry system. Range checks and the skip patterns of the questionnaire along with a number of other consistency checks were built into the entry program. Instructions within the program also directed the entry operator to procedures to follow whenever a questionnaire failed to pass any of the pro­gram checks. Problems that could not be resolved by the entry operator were given to a supervisor for resolution. As a quali­ty control check, the questionnaire data were entered a second time by a different operator. A program comparing the two sets of data was then run and any differences were checked against the interview questionnaire and when necessary corrections were made.

5.5 Data Cleaning

In the NBS, checks for missing information, range, and consistency were made by the data entry control program. All interviewer instructions and the questionnaire skip logic were also part of the program.

In order to process the NBF data most efficiently, data cleaning in batches of 900 consisted of several different proce­dures: 1) A cleaning program that was part of the data entry system was run after entry was completed and again after errors found by the difference program had been corrected. 2) The difference checking program was used for every batch to locate any type of keying error that would not be detected by the checks built into the entry program. 3) After initial cleaning on each batch, a comprehensive series of consistency checks was run. Included in these checks were ones spe­cifically requested by the project officer and the principal investigator. All errors detected were checked against the interview questionnaire and the data file was subse­quently updated to make any needed corrections. In a few cases the respondent needed to be contacted to obtain clarification; but in most cases, after reviewing the total interview and answers to other relevant questions, it was possible to resolve the inconsistency.

Throughout the NBF, all cases were documented with a written explanation of the problem where missing data could not be obtained or an inconsistency could not be resolved. This documentation was provided to the project officer when all data cleaning had been completed.

6.  WEIGHTING THE NBDS DATA

6.1.  Introduction

Because sample estimates which are obtained from weighted survey data are less biased than those produced from unweighted data, weights have been furnished with the NBDS.  The 1982 NBS public use data tape comes with weights that are the product of sampling, post‑stratification and nonresponse adjustment fac­tors.  The "sampling" weight is necessary in order to yield unbiased estimates of the survey population.  "Post‑ strati­fica­tion" uses ancillary information from the Master Beneficiary Record file to produce weights that improve the precision of sample estimates.  The "nonresponse" adjustment factor is de­signed to reduce biases due to differential response rates among population groups.  The overall weights can be used to produce the best possible estimates of the NBS survey popula­tion. The 1991 NBF weights adjust the 1982 NBS weights for nonresponse to reduce bias due to differential response rates.

6.2 The NBS

This section documents the methodology employed in the creation of weights for the NBS data tape.  The data set con­tains final weights that represent the product of the three weight adjustments:

(i) a basic sampling weight,

(ii) a post‑stratification weight, and

(iii) a nonresponse adjustment weight.

6.2.1  Sampling and Post‑Stratification Weights‑

The basic sampling weight is simply the inverse of the overall selection probability.  The sampling weight varies for each subdomain and ranges in value from 22.6 to 236.2.  The first column of Table 6.1. presents the basic sampling weights employed in the NBS.  The basic sampling weight also incorporat­ed weight adjustments required when the second stage sampling rates within psu's were larger than one.  However, this was necessary for only five subdomains (i.e., those with the highest sampling rates).

The post‑stratification weight adjusts the survey data so that the sample and universe distributions match precisely across the subdomains of study.  Without this adjustment, one can expect these distributions to match only on the average.  The reason for this is that the sample distribution is subject to a small amount of sampling variability.  The variability is a result of first‑stage selection probabilities (for nonself‑representing psu's) being based on 1985 projected population counts rather than counts of eligible beneficiaries.

  Post‑stratification adjustments were calculated by divid­ing the universe counts by the weighted sample counts separately within each subdomain.  The resultant weights are exhibited in the second column of Table 6.1.  Most adjustments are negligi­ble.  Larger adjustments range from 1.04 to 1.08; the largest occurs for divorced wives (1.12).  The post‑stratification weight was applied to all persons selected into the NBS regard­less of whether or not they were interviewed.

6.2.2  Nonresponse Adjustment Weights

In order to best understand the procedures employed to adjust for nonresponse in the NBS, it is useful to envisage the total sample as being composed of four groups:

Group Composition

A Eligible respondent interviewed

B Eligible respondent not interviewed

C Respondent not interviewed, eligibility unknown

D Respondent not eligible

Screening information obtained at the time of first contact was used to establish the eligibility of a selected individual.  For instance, an individual who was deceased or institutionalized at the time of first contact was not considered to be an eligible member of the survey popula­tion.  Group C was the only subset for which screening information, and thus eligibility, could not be ascertained.

The weighting strategy for nonresponse compensation takes the expected proportion of eligibles in Group C plus the popula­tion in Group B (known eligible) and allocates their weight to Group A (interviewed eligible respondents) within weighting classes.  The weighted counts are based on the product of the sampling and post‑stratification weights.  The weighting classes are constructed from auxiliary data related to income items, eligibility status and the propensity to respond (i.e., the response rate).

The following variates were considered for the creation of weighting cells:

(i) Primary Insurance Amount (PIA)

(ii) Age

(iii) Sex

(iv) Race

(v) Subdomain (which incorporates age and sex)

(vi) Primary Sampling Unit (psu)

Various tabulations and regressions were employed to investigate the potential usefulness of these items.  The results of this effort are the weighting cells presented in Table 6.2.  The cells are various combinations of PIA quartiles, psu categories and subdomain.  Four psu categories were used:  nonself‑representing metropolitan psu's (NSR SMSA); nonself‑representing nonmetropolitan psu's (NSR RURAL); self‑representing psu's demonstrating high response rates (SR GOOD); and self‑representing psu's demonstrating poor response rates (SR POOR).  In total, 98 weighting cells were utilized; these are serially numbered 1 to 98 in Column 4 of Table 6.2.

The weight adjustments were calculated as follows.  Let A, B, C and D represent the weighted totals for Groups A to D, given above.  Furthermore, let T denote the weighted total of all groups (T = A + B + C + D).  Then

CE = C{[A+B]/[T‑C]} is the expected number of eligibles in Group C;

TOTE = A+B+CE is the total expected number of eligibles in the uni­verse;

and TOTE/A = T[A+B]/A[T‑C] is the weight adjustment used for Group A members.

These adjustments were calculated and applied separately within each weighting class.  The final weight is the product of the sampling weight, the post‑stratification weight, and the nonresponse adjustment.

6.2.3  Generalizability to the NBS Sample Universe

Using the weighted data set, the NBS provides valid infer­ences to the nondeceased, noninstitutionalized household popula­tion of new Social Security beneficiaries (plus the Medicare‑only group) as defined in Section 2 of this report.

Note that in its entirety, the NBS data set does not form a conven­tional population.  The reason is due to the Medicare‑only group.  It was included in the survey as a comparison group to the other sample types, and therefore is not a member of the SSA beneficiary universe.  Analysts are therefore urged to exclude the Medicare‑only group when analyzing the data, except when specific intergroup comparisons are desired.

6.2.4 Individuals versus Couples

The NBS represents individual respondents as they were selected in the sampling process. Because both a husband and wife could be selected as individual respondents, a count of married individuals includes some cou­ples twice. For example, the husband could have been selected as a retired worker, while his wife was selected as a wife beneficiary or as a retired worker. Accordingly, 82 couples were sampled twice and both the husband and wife were interviewed as original sample persons. To examine couples in the NBDS, data should be weighted to compensate for double sampling. A new weight variable CUPLWGT has been estimated for couples in the NBDS in 1982 and placed at the end of the Admin­istrative data file. Within each double sampled couple, the weights of both spouses were summed and divided by four, and given to each spouse.

6.3 The NBF

The 1982 sample weights were adjusted for nonresponse in the NBF. Preliminary analysis found little variation in response rate across socio-demographic and economic characteristics. The 1991 NBF weight is variable FINALWG3 for individuals and CUPL91 for couples on the NBF data file.

7.  SAMPLING ERRORS FOR THE NBS

7.1.  Introduction

Since the data presented on the NBDS data files are based on a sample, they may differ somewhat from the figures that would have been obtained from a complete census based on the same schedules, instructions, and interviews.  Particular care should be exercised in the interpretation of figures based on relative­ly small numbers of cases as well as small differences between figures.  The standard error is primarily a measure of sampling variability, that is, of the variations that occur by chance because a sample rather than the entire population is surveyed.  Assuming a normal sampling distribution, the chances are about 68 out of 100 that an estimate from the sample would differ from a complete census figure by less than the standard error.  Chances are about 95 out of 100 that the differ­ences would be less than twice the standard error. The more commonly used cut-off points 90, 95, and 99 chances out of 100 represent devia­tions of less than 1.65, 1.96, and 2.56 standard errors, respec­tively.

The NBS employed a complex (clustered) multistage area probability sample design.  The NBF reinterviewed the origi­nal NBS sample persons and the surviving spouses of deceased sample persons. Thus, the usual simple random sample estimates of sampling error are biased for the NBDS data.  Sampling error of sample‑based statistics should reflect the complex nature of the sample design.  This section delineates a technical approach used to calculate sampling errors of estimated totals, percent­ages, means, medians and quartiles.[[9]](#footnote-9) The approach is a pseudo-replication technique called Balanced Repeated Replications (BRR) in which the sampling error for any statistic is estimat­ed with the separate sampling strata used in the survey. The BRR is an alternative to estimations of generalized sampling errors.

7.2. Generalized sampling error

Generalized sampling errors can be estimated for survey variables for use in significance testing. The NBS User's Manual contains several tables of generalized errors for selected popula­tions in the NBS. Generalized sampling errors were not estimat­ed for the NBDS because of its design complexity. Sampling errors differ across variables, between the NBS and NBF, and for each major subpopulation in the NBDS.

7.3 Balanced Random Replicate sampling error estimates

Balanced Repeated Replications (BRR) can be used to calculate sampling errors of statistics.  BRR calculations are especially amenable to paired selection sampling designs. The algorithm for calculating variances calls for the formation of K replicate half‑samples (where K is a number divisible by four and greater than the number of paired strata).  Each half‑sample is formed by selecting one psu from each paired stratum and assigning it to that replicate.  Half‑sample replicates are formed to meet certain orthogonality requirements (see Kish and Frankel or Plackett and Burman).[[10]](#footnote-10)

Because the NBS utilized a design whereby two psu's were independent­ly selected (with replacement) per stratum, a paired selections model can be used to calculate sampling errors.  For estimates in the NBDS, primary sampling units (psu's) are paired in accordance with their original selection stratum in the NBS. The replicate design matrix used to generate the half‑samples in the NBS and NBDS was taken from Plackett and Burman.[[11]](#footnote-11) Using 52 half-samples, the analyst can estimate an approximate sampling distribution and standard error for any statistic. This stan­dard error should be used for significance testing and confi­dence limit estimates. The NBS public use data tape includes a set of 52 half‑sample indica­tors.  These variables have two possible values‑‑zero and one.  A value of one indicates that a case is included in a particular half‑sample.  These indicators were formed by selecting one PSU from each paired stratum in the NBS sample design.  In total, the 52 half‑samples meet the orthogonality requirements as specified in Plackett and Burman.[[12]](#footnote-12)  Moreover, the half‑sample indicators may be employed to yield sampling errors for any statistic via the BRR pseudo‑replication technique.

The general formula used to calculate the variance of any statistic t is as follows.  Let t denote the statistic (e.g., mean annualized total income) calculated using the entire sample.  Furthermore, for half‑sample i, let ti denote the statistic t based on the ith half‑sample.  Then the BRR variance of t is

vart = {SUM:[ti ‑ t]2} / K

where K denotes the number of generated half‑samples. For the New Benefi­ciary Survey and the NBDS, 52 replicate half‑samples were employed and k=52.  The

BRR variance of t in the NBDS (with ts for the value in the entire sample and ti for the value in the ith half-sample ) becomes

vart(s) = {SUM:[ti ‑ ts]2}/52.

The sum of the squared differences is divided by the total number of half‑sample replicates (in this case, 52).

The figures in Table 7.1 can be used to illustrate the use of half‑sample replicates for sampling error computation.  For simplicity, 10 cases and eight replicate half‑samples are employed.  Suppose an estimate of the mean monthly pension income and its standard error were desired.  Then ts = mean = 89.7, and the half‑sample means range from 87.0 to 92.0.  From these one would calculate the squared differences between the half‑sample mean and the overall mean.  Finally, the variance and sampling error are given at the bottom of the table.

As the illustration shows, the algorithm for calculating the variance is easy.  It can be displayed in a five‑step procedure:

(i) calculate the estimate from the entire sample (ts);

(ii) calculate the estimate based on each half‑sample (ti);

(iii) sum the squared differences of the half‑sample and total sample estimates (SUM:[ti ‑ ts]2);

(iv) divide this sum by the total number of half‑samples to yield the variance of the estimate;

(v) take the square root of the variance to yield the sampling error.

Other estimates of the variance may be computed from the half‑sample indica­tors.  The simplest one has been presented in this re­port.  Alternatives can be found in Kalton.[[13]](#footnote-13)

Calculating sampling errors for the NBS is slightly more complicated.  The reasons are two‑fold.  First, allowances must be made for missing data.  Although many of the missing entries were imputed, a small number remained when there were insuffi­cient auxiliary data.  Secondly, the data must employ weights to yield

estimators which reflect unequal probability sampling, post‑stratification and nonresponse adjustment.

Table 7.2 employs actual NBS data to illustrate a calculation of the sampling error of mean quarterly Social Security benefits (Variable QSS) among retired male workers who reported nonzero amounts.  The first two columns of the table display the weighted and unweighted number of valid cases for this variable.  The last column pres­ents the average quarterly Social Security benefit for each replicate half‑sample.  As shown at the bottom of the table, the average benefit among retired male workers who receive nonzero amounts is about $1,881, with a sampling error of roughly $16.

To construct a 95 percent confidence interval of the mean quarterly benefit, the unweighted number of cases is needed, n = 5,182.  This is necessary to determine the degrees of freedom (df) associated with the t statistic.  In the example,

(1‑.05)100 = 95 percent level of confidence

C = 1,881

S = 16

t{(1-.05/2), df} = t{.975, 5182} = 1.98 (conservatively),

where t{.975, 5182} represents the 97.5 percentile of a student's t distribu­tion with 5l82 degrees of freedom.  (Here, a conserva­tive value (1.98) corresponding to 120 degrees of freedom was used.)  Thus,

lower limit = 1881 ‑ (109)(1.98) = 1,849

upper limit = 1881 + (109)(1.98) = 1,913.

A 95 percent confidence interval for mean nonzero quarterly Social Security benefit for retired male workers includes values $1,849 to $1,913.

In closing, the replicate half‑samples provide the analyst with the necessary tools for calculating the approximate stan­dard error of propor­tions, means, quartiles, regression coeffi­cients, and other statistics.  In this respect, the NBDS is rather unique with actual indicators of half-sample replicates on the NBS data file.

8.  THE QUESTIONNAIRE

8.0 The NBDS Questionnaires

The NBDS used three questionnaires. The 1982 NBS questionnaire collected information on sample persons about 1-2 years after they received benefits. The 1991 NBF questionnaire focused on the experience of original sample persons who survived from the NBS until the 1991 interview. The 1991 NBF used a reduced questionnaire for surviving spouses of original sample persons who had died. Part of the surviving spouse questionnaire referred to the experiences of the decedent, and part of it referred to the surviving spouse.

8.1.  Development

Items from the NBS questionnaire were initially developed from the experiences with the data gathered from three prior studies‑‑the Survey of Newly Entitled Beneficiaries administered in 1969‑1970, the 1978 Survey of Disability and Work, and the precursor to the Survey of Income and Program Participation.  Once an initial draft had been developed, six pretests were conducted (with 9 or fewer respondents each) resulting in extensive modifications to the instrument.  Following the final pretest, the questionnaire was completely precoded and precolumned in order to facilitate data entry.

SSA created the NBF questionnaires based on the NBS questionnaire and expected changes from 1982 to 1991. Major parts of the NBF questionnaire exactly replicated the NBS in order that comparisons could be made between them. This was supplemented by topics on changes over the decade, a more extensive section on health and health insurance, and work attempts of disabled workers. Three pretests were conducted, each with nine or fewer respondents. Based on these pretests, SSA modified the instrument. In addition, a pilot test of the final instrument was conducted on about 200 NBF cases in late 1990. Based on the pilot test, the final instrument was modified very little, and these interviews were included in the NBF. The final questionnaire was completely precoded and precolumned in order to facilitate data entry.

8.2.  NBS Organization and Format

The NBS survey instrument was divided into the following sections:

1. Living arrangements

2. Employment: history, pension detail, and noncovered work

3. Health

4. Economic status

5. Marital history and child care

6. Program knowledge

7. Spouse

On average, the questionnaire was administered in 65 minutes, with a range of 35 to 90 minutes depending on such things as the individual's work history, marital status and complexity of their income and assets.  A brief screening form first confirmed that the interviewer had contacted the correct individual.  The screening form was also used to eliminate institutionalized individuals and to record any deaths of beneficiaries that had occurred since the NBS universe selection was made in March 1982.  The questionnaire, as described below, was then administered.

8.2.1.  NBS Living Arrangements

The purpose of this section was to obtain living arrangements and basic demographic information about the sample person and members of his or her household.  The requested information included the ages and relationships to the respondent of all persons living in the household.  The beneficiary's current marital status, race, and number of years of school completed were also recorded.  These data were to be used to produce basic descriptions of the beneficiary population and their living situations, and to provide explanatory controls for analyses.  The sequence of questions was asked of all respondents.

8.2.2.  NBS Employment: History

This section collected an employment chronology of each respondent from either 1951 or the year the respondent became age 21, whichever was later.  The year 1951 was chosen because SSA uses annual earnings amounts after 1950 (or the year the beneficiary became age 21, if later) to compute cash benefits.  Job beginning and ending dates were recorded for each job lasting at least 12 months.  Any secondary jobs held concurrently with the primary job were noted.  This section provided a descriptive history of the work experience of the beneficiary for use in analyzing job patterns and employment status.  Additionally, periods of no employment were of particular analytical interest in research on women's benefits and incomes.  Respondents who had 1) never worked, 2) last worked before 1951, or 3) never had a job which lasted at least one year were not asked questions from any of the employment sections.

The employment history section also served as a screening device for the employment and pension detail section that followed.  After completing the chronological history, the interviewer selected the jobs that fit into three categories‑‑CURRENT, LAST, or LONGEST.  The CURRENT job, if any, was the job at which the beneficiary was employed at the time of the interview; the LAST job was that held at or immediately before the window for inclusion in the sample (May 1980); and the LONGEST job was the job of longest duration since 1951.

Often, a job fell into more than one category; in fact, a single job may have been in all three categories‑‑CURRENT, LAST, and LONGEST.  A separate sequence of questions was available for each of the CURRENT, LAST, and LONGEST jobs.  If a single job was identified in more than one category, only one of the sets of questions was asked about that job.  As a result, from one to three jobs may have been highlighted.  If the respondent was currently working, the CURRENT job sequence was always asked.  If not currently working, the CURRENT job sequence was never asked.  The LAST job sequence was always asked except when the job identified as LAST and the job identified as CURRENT were the same; then only the CURRENT sequence was asked.  The LONGEST job sequence was always asked unless the job identified as LONGEST was also identified as LAST (in which case, the LAST sequence was asked), or as CURRENT (in which case, the CURRENT sequence was asked), or as LAST and CURRENT (in which case, the CURRENT sequence was the only one asked).  As a result, the data for a respondent might not include answers to questions in each of the three sets.

8.2.3.  NBS Employment: Pension Detail

For each job highlighted in the employment chronology section (CURRENT, LAST, and LONGEST), a detailed set of questions was asked about that job's characteristics and pension plan provisions.  CURRENT job data defined the employment circumstances of the respondents who were working at the time of the interview.  A series of questions was also asked about changes in hours or weeks worked during the previous three years in order to ascertain the transition to retirement.  The LAST job described the employment characteristics of the beneficiary immediately before Social Security benefits were first received.  Reasons for leaving the LAST job were recorded to ascertain the perceived role of pension eligibility, family commitments, health, and mandatory retirement in the decision to leave the job.  The LONGEST job detailed the work environment at which the respondent spent the greatest period of time.

For each job, information was obtained on industry and occupation, Social Security coverage, and self‑employment or employee status.  The hours and weeks of work and job‑end earnings level were used to determine full‑ or part‑time status, earned income, and the worker's hourly wage rate.  Self‑employed beneficiaries were asked about Keogh plans, and employees were asked questions concerning pension coverage and receipt.  The responses from these pension questions provided basic information on the types of jobs covered by pensions, eligibility ages, benefit amounts, changes in benefits, lump‑sum payments, and survivor benefits.  These data can be used to assess the role of pensions in the timing of retirement.  Within the sequence of questions for each job, the subseries of questions for self‑employed beneficiaries was separate from the nonself‑employed questions.  As a result, only responses for one or the other but not both of these subseries could be collected.

8.2.4.  NBS Employment: Noncovered Work

In addition to the CURRENT, LAST, and LONGEST jobs, information on all additional jobs not covered by Social Security was also requested in order to evaluate proposals affecting Social Security benefits for workers with periods of noncovered work.  This section included questions about service‑connected disability and the disability percent ratings that determine Veterans' Administration benefits.  These questions were asked separately to ensure that military service was not overlooked if it occurred before 1951.  All respondents, whether asked the employment series or not, were included in this series.

8.2.5.  NBS Health

Respondents were asked to identify current health conditions and recent utilization of medical and inpatient hospital services to provide a partial measure of current health status.  A series of questions about self‑assessed work limitations and their influence on work activity elicited details about the nature, extent, and work‑related causes of reported health impairments.  This section also contained questions about physical mobility, functional limitations, and health care plan coverage.  All respondents were asked this question series. Please note that respondents skip some or all of the functional limitation questions if they reported being bedridden or wheelchair-bound.

8.2.6.  NBS Economic Status

The NBS economic status section focused on sources and amounts of income and assets. Social Security benefits alone are not designed to provide full retirement or disability income.  It is expected that beneficiaries will have available other sources of income such as pensions, savings, or retirement earnings.  Assets are an integral source of retirement income, both for the income they produce in the form of interest, dividends, and rent, and for their cash value if liquidated.  Both income and assets influence the relative importance of Social Security benefits in the total income of new beneficiaries.

Information was obtained on the respondent's (and spouse's) income from earnings, pensions, means‑tested payments, and income received from other individuals.  Questions were asked about the amounts of income received from each source during each of three months preceding the month of interview.  Where relevant, a respondent was also asked if the benefit was derived from one's own work record or from that of a spouse, and whether it was a retirement or disability benefit.  Information on ownership and value of liquid assets, stocks, bonds, IRA or Keogh accounts, own home, real property, and businesses or professional practices was collected.  Questions on income of the respondent's own children under age 19 who were living in the household and any other person aged 19 or older in the household were also asked.

Two similar sets of income items were recorded:  one if the respondent was not currently married, i.e., widowed, separated, divorced, or never married, and one if the respondent was married.  Only one set was used for each respondent.  If the married set was used, the questions asked about income sources and amounts for the respondent and for the spouse or, when they received a single combined income from a particular source, both of them together.

The asset questions were asked of all respondents.  Except for Keogh accounts or IRAs and life insurance policies, married respondents were to include their spouse's assets with their own.  The Keogh‑IRA and insurance policies were asked about for the respondent alone (whether married or not) and if married, separate questions were asked regarding the spouse.

8.2.7.  NBS Marital History and Child Care

Marital status, past and present, can affect Social Security benefits.  This section gathered information on the duration of the current marital status and the number of times the respondent had been married.  For widowed, divorced, and separated beneficiaries, the beginning and ending dates for their terminated marriage were collected.  Parts of this section were asked of all respondents except those who had never married.

Caring for children can affect a person's labor‑force participation, and, thereby, the earnings used to calculate Social Security benefits.  This section collected information on the dates of birth and the relationships to the respondent of children whom the respondent raised.  This section was asked of all respondents who raised any children, biological or otherwise, who were alive or deceased.  Information on up to five children was recorded.

8.2.8.  NBS Program Knowledge

This section investigated the beneficiary's knowledge of certain aspects of Social Security program provisions.  Questions designed for the retirement sample assessed the individual's knowledge of the earnings test.  Individuals in the disability sample were asked a separate set of questions to assess their knowledge of the provisions of the Social Security Disability Amendments of 1980.  The Medicare sample was asked part of the retirement set of questions.  If a proxy for a retirement sample member was acting as the respondent, no program knowledge questions were asked.

8.2.9.  NBS Spouse

Spouses of married beneficiaries were also asked to respond to several sections of the questionnaire.  If the spouse was unavailable, the respondent was asked the questions as a proxy for the spouse.  Those who agreed to participate were individually asked all questions in the employment section and a much‑shortened health section.  Income and asset holding information of spouses was included in the economic status section of the respondent.

The employment questions were identical to those described for respondents except that no separate history of military service was requested.  Those who had never worked, last worked prior to 1951, or had never had a job that lasted at least one year were only asked the health section.  All others followed the same response sequence for CURRENT, LAST, and LONGEST as described for the respondent.

8.3 NBF Organization and Format

Two nearly identical survey questionnaires were designed by SSA and subsequently refined by conducting three administrative field tests: one questionnaire was administered to the original respondent from the 1982 survey; the second, nearly identical although shortened questionnaire, was administered to a surviving spouse in those instances where the original respondent had died. Both questionnaires included the following topics:

1. Living Arrangements

2. NBS Respondent Employment: History and Disabled Worker Work Attempts

3. Health

4. Economic Status

5. Marital History

6. Spouse or Surviving Spouse

On average, the questionnaire was administered in 72 minutes, with a range of 15 to 300 minutes. Because different groups of respondents answered varying sections of the questionnaires, the questionnaires and codebook should be carefully studied before processing the data. Chart 8.1 indicates the topics asked of different groups. To facilitate analysis, separate data files have been issued for the surviving original sample persons and for the surviving spouses of decedents. Interviews with original sample respondents are coded 1 or 2 on the variable RPROX; interviews with surviving spouses are coded 3 on the variable RPROX. The Question by Question Specifications instructed the interviewers on the meaning of the questions and these specifications should also be studied in order to understand the intent and logic of the responses comprising the dataset. The questionnaires and the Question by Question Specifications are available in a separate manual.

**Chart 8.1 1991 New Beneficiary Followup (NBF)**

**Surviving spouses**

**Topics Living Current spouses of deceased Deceased\***

**respondents of respondents respondents respondents**

**Living Arrangements**

**Marital status and household composition x x**

**Family contacts x**

**Housing and migration x x**

**Employment**

**Yearly employment since NBS x x x x**

**Most recent job x x**

**Reasons/conditions for working/not working x**

**Returns to work of disability x**

**beneficiaries**

**Health**

**Health, health insurance, and long term**

**care stays x x x x**

**Functional Status x x x**

**Economic Status**

**Sources of monthly income x x x**

**Pensions and lump sum payments x x x**

**Asset holdings, debt, and income from assets x x x**

**Changes affecting asset levels x**

**Subjective well-being x**

**Marital change and its economic effects x x**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\* Reported by surviving spouses.**

8.3.1 NBF Living Arrangements

This section paralleled the NBS on household membership, but also included information on family contacts, housing changes, and migration.

The objective of the family contacts section was to identify the family social network and availability of close relatives for assistance. The NBF identified the extent of contacts with children and parents. It also measured their proximity.

The objective of the housing and migration section was to identify changes in housing. For each of five moves, the NBF measured the extent of housing changes, the reasons for housing changes, the sale of a home, and uses of money from selling a home.

8.3.2 NBF Employment: History

The objective was to identify the extent and nature of employment since the NBS. The NBF employment history measured the extent of labor supply in each year from 1983 to 1991. Because most interviewing occurred in 1991, 1990 is the last full year of labor supply for most persons. The NBF measured the characteristics of the most recent job using questions similar to those in the NBS. It also identified reasons for working and for not working. In the interviews with surviving spouses of deceased NBS respondents, this section referred to the decedent.

8.3.3 NBF Employment: Disability Work Attempts

The objective of this section was to better understand how Disabled Workers return to work and the activities and services that were useful to finding work. The NBF asked recipients of Disabled Worker benefits about their attempts to work and rehabilitative services. If the person found work, the NBF asked about employer accommodations to disability. This section was not in the reduced questionnaire for surviving spouses.

8.3.4 NBF Health

The objective of this section was to assess the level of health, functioning and changes between the NBS and the NBF. Most NBS health questions were repeated in the NBF. The NBF extended the health insurance questions to specific types of coverage. The NBF also sought information on the longest stay for long term care. And the NBF extended the functional status items to include ability to drive. It also identifies specific activities of daily living and specific instrumental activities of daily living. The health section referred to the decedent in the reduced questionnaire for surviving spouses of NBS respondents.

8.3.5 NBF Economic Status

The objective of this section was to measure economic status and sources of change since the NBS. Because measures of change would compare the status in the NBF to the status in the NBS, the NBF almost exactly repeated the NBS questions on sources and amounts of income and assets. In addition, the NBF explored the nature of pension changes and survivorship. The NBF assessed the extent of debt and changes affecting asset levels. The NBF also measured the perceived economic situation.

8.3.6 NBF Marital Changes and Economic Effects

The objective of this section was to identify changes in marital status after 1982 and their economic effects. It identifies dates of widowing, divorcing, and marriage since the NBS. For widow(er)s, the NBF identifies death related expenses for major bills that were personally paid. It also identifies sources of money to pay these expenses. The NBF includes questions on changes in income sources brought by widowing and divorcing.

8.3.7 NBF Spouse

The objective of this section was to gather health and employment information about the spouse of the original sample person in the NBS. The NBF repeated major portions of the health topic. It also measured the extent of labor supply from 1983 to 1991.

9.  FIELDING PROCEDURES

9.0 Introduction

The 1982 NBS and 1991 NBF field procedures were similar. Field administration of the NBS was handled jointly by Temple University's Institute for Survey Research (ISR) and Mathematica Policy Research (MPR), while field administration of the NBF was made by ISR.

The 18,599 NBS interviews were conducted in‑person and were adminis­tered between October and December 1982 in the 48 contig­uous states and the District of Columbia.  The sample design used a clustered probability sample of 100 primary sampling units based on the 1980 Census.  A small number of interviews with beneficiaries who were previously unavailable were conduct­ed in January 1983.

ISR completed 13,962 NBF interviews for persons who had been in the NBS. In each case, an interview was conducted with the original sample person, a surviving spouse if the original sample person had died, or a proxy respondent if the original sample person was either mentally or physically incapacitated. Most respondents were interviewed in person at their residences. A pilot training conference in November 1990 yielded approxi­mately 200 interviews and enabled ISR to refine procedures and question design. The majority of interviews occurred in 1991, with some conducted in 1992, primarily by telephone. ISR also tried to contact and to interview by tele­phone respondents who were out of the United States, who were in isolated locations, and who had refused an interview.

Persons selected for each survey were sent an introductory letter asking for their participation and notifying them that an interviewer would be visiting them shortly.  Interviewers were instructed to attempt a first contact in person.  If the first attempt was unsuccessful, the interviewers were trained to make as many additional contacts as necessary in order to obtain a completed questionnaire.  Questions from persons concerning the authenticity of the survey were expected.  All interviewers were trained to display their identification badges, to confirm the voluntary nature of each respondent's participation, and to encourage a call to the local Social Security office if the person had any remaining doubts.

9.1.  NBS Interviewer Recruitment and Training

NBS interviewer recruitment took place throughout the 100 primary sampling units in the ISR/MPR national sample.  Approxi­mately one‑half of the interviewer staff was composed of previ­ous ISR/MPR interviewers and persons referred by these inter­viewers.  Initially, 637 interviewers were trained. When eighty‑two of these dropped out or were unacceptable, an addi­tional 84 were trained, resulting in 639 interviewers.

Interviewers participated in a three‑day training conference prior to receiving their assignments.  A total of 16 initial and three restaffing training conferences were held.  Training occurred in Philadelphia, Tampa, Houston, St. Louis, San Fran­cisco, Chicago, Atlanta, Los Angeles, Boston, and Rochester (NY).  Prior to attending the conference, the interviewers received a home‑training packet containing a sample question­naire, training manual, and appropriate forms.  Interviewers were to review these materials prior to coming to the training conference.

The training conference covered general interviewing tech­niques, conventions concerning the questionnaire and general forms, techniques for reducing nonresponse, specifics of the questionnaire and practice inter­views.

The Field Department was composed of four in‑house Field Administra­tors (two from ISR and two from MPR).  Each Field Administrator was responsible for 13‑14 Field Coordina­tors, in the field, who in turn were responsible for 12‑18 interviewers.  Each set of individuals reported progress and problems to the next higher administrative level.  Problems which could be handled at the coordinator level were taken care of in the field.

9.2.  NBS Callback Procedures and Refusal Conversion

Interviewers were instructed to make unlimited recontacts or callbacks in order to obtain a completed questionnaire.  If no one was at home in the initial contact attempt (conducted in‑person), neighbors were to be contacted to try to determine when the respondent was likely to be found at home.  Additional contacts by telephone and/or return to the household were made on the basis of any such information obtained.  If no other informa­tion was available, the interviewer was instructed to vary calling times, emphasizing afternoons, evenings, and week­ends.  Interviewers were not allowed to return a Screening/Call Report form until a final disposition had been obtained.

In the event a refusal was encountered, the interviewer discussed the circumstances with the Field Coordinator.  Depend­ing on the case, the interviewer may have made an additional contact, the Field Coordinator may have reassigned the case to another interviewer, the Field Coordinator may have contacted the respondent directly, or the case may have been forwarded to ISR.  At ISR, the case was again considered and whenever a conversion looked remotely possible, a letter was sent to the respondent requesting their participation.  Such contact was again followed by recontact on the part of the interviewer or a reassigned interviewer.  In all, only 1,677 or 7.7 percent of the eligible sample (21,657) had a final disposition of refusal.

9.3.  NBS Quality Control

9.3.1.  Editing and Critical Items

The first five of each interviewer's completed question­naires were thoroughly edited upon receipt at ISR.  Additional interviewing work was not authorized until the questionnaires had been checked and memos for missing information and recording errors had been issued.  For the remain­der of the assignment for each interviewer, 10 percent of the question­naires completed were edited for missing responses to critical items (as defined by the Project Officer at SSA).  If responses to critical items were missing, those items and any other missing items were explained in a memo to the interviewer.  It was the interviewer's responsibility to recontact the respondent to obtain the missing information.  When unable to retrieve the information, telephone calls from ISR were made directly to the respondent.  Regardless of the outcome of recontact for missing information, a questionnaire was retained if, at a minimum, the employment history and the CURRENT, LAST, and LONGEST job sec­tions had been completed.

Unedited interviews with missing critical items were identi­fied during coding at ISR and during machine editing at MPR.  Each resulted in an additional memo to the interviewer and/or a direct call to the respondent.  A list of the questions consid­ered as critical items appears in Table 9.1.

9.3.2.  Validation

A validation letter was mailed to all cases for which a completed questionnaire was received at ISR.  The letter con­tained a few demographic questions and a few questions concern­ing the administration of the inter­view.  The respondents were asked to complete the questions and return the letter in a postage‑paid return envelope.  When returned, the information was checked against the information on the questionnaire.  Any inconsisten­cies were forwarded to the Field Administrator for rectification.  If the discrepancies were due to deception on the part of an interviewer, that interviewer's entire work file was telephone validated and, when necessary, the respondents were reinterviewed by another interviewer.

9.4 The NBF Field Procedures

The NBF field procedures were very similar to those of the NBS, and only differences will be noted here. The NBF had a total of 450 interview­ers and 22 coordinators who were trained in 13 training conferences in major American cities. The NBF had a refusal rate of about 10 percent. ISR conducted all editing and data processing. Processing started with a check-in of incoming forms for completeness. ISR conducted a complete edit of the first three interviews of each interviewer, and a prelim­inary edit of all questionnaires before data entry. Data entry was made with ISR's CATI data entry system which made range and consistency checks. Data were entered twice by different techni­cians, and ISR checked the consistency of data entry. Retrieval of missing critical data from NBF questionnaires was obtained by phone by ISR in-house interviewing staff. A list of the questions considered as critical items in the NBF appears in Table 9.2.

10.  IMPUTATION IN THE NEW BENEFICIARY SURVEY

10.1.  Introduction

Imputation is a technique used in data processing to compen­sate for item nonresponse.  Item nonresponse occurs when a respondent answers some, but not all questions in the survey instrument.  Missing data are "imputed" when values estimating the true (but unknown) response are inserted in place of missing value codes.  Missing data were imputed in the NBDS for a set of critical income and income‑related items.  This section is devoted to a brief description of the imputation methodology.

The items imputed in the NBDS may be categorized into four groups:  earnings items, income types, assets, and miscellaneous income items.  Table 10.1. shows the components of each variable group.  In the NBS, 358 variables were imputed, representing 3 earnings items, 19 income types, 14 asset types, and 6 miscella­neous income variables.  The NBF closely replicated the NBS imputation methodology. Implicitly, all quarterly or annualized variables were also imputed, since they were constructed from imputed data.

The effects of imputed data on statistical analyses are contingent upon several factors:

.  the amount of data imputed;

.  the appropriateness of the model employed in the imputation;

.  the specific analysis being conducted.

If the amount of imputed data is small, say less than five percent, then the effects of imputation are small.  When rates of imputed data are nonnegligible, the possibility of bias arises.  To the extent that the imputation model correctly predicts the missing value, the potential for bias will be lessened.  Finally, imputation schemes can yield data sets which allow unbiased estimates of some population parameters (e.g., the mean) but biased estimates of other parameters (e.g., re­gression coeffi­cient).  Interested readers should consult Kalton or Santos[[14]](#footnote-14) for a discus­sion of this topic.  Given that substan­tial amounts of data are imputed for several income‑related items in the NBS, analysts should exercise caution when making statistical inferences from these data.

10.2.  Imputation Methodology in the NBS

A multitude of imputation techniques were employed to compensate for item nonresponse in the NBS.  This section re­views the general approaches taken to impute missing data.  Interested readers are referred to the methodological report on imputation by Czajka[[15]](#footnote-15) for full details.  A subsection for each variable group requiring imputation is presented below.

The rates of imputed data in the NBS varied widely among the four variable groups.  About 15 percent of earnings data were imputed.  Less than one percent of income type receipts were imputed; however, 1 to 14 percent of income type amounts were substituted.  Values were inserted for 0.3 to 4.5 percent of asset holdings and 11 to 38 percent of asset amounts.  Final­ly, the rates of imputed data for miscellaneous income items ranged from 9 to 25 percent for amounts and 0.2 to 1 percent for receipts.

10.2.1.  Imputation of Earnings

Missing data were imputed for 12 earnings fields which represented the annual incomes from the three earnings items (CURRENT, LAST, and LONGEST jobs) for the respondent and the spouse, for self‑employed and employee earnings.  Annual amounts were constructed from annual work effort and rate of pay.  (Annual work effort combined hours worked per week and weeks worked per year into a single item.)  Annualized earnings were defined as the product of the rate of pay and the annual work effort.  As necessary, one or both of these components (i.e., effort and rate) were imputed in the construction of annual earnings.  Whenever rate of pay was missing, an hourly rate was imputed, so that maximum utility could be gained from complete or partial annual effort information.  In total, earnings were imputed to roughly 3,300 fields, representing 2,735 cases in the NBS data set.  Imputations of earnings account for about 15 percent of the entire NBS sample.

Not all cases with missing data were imputed.  Whenever the response to the employee/self‑employment question was unan­swered, imputation was not performed in the NBS.  This affected 815 fields, and roughly 400 cases.

Most imputed hourly rates were obtained using a technique called stochastic regression.  The term "stochastic" is used to describe a procedure where residual error terms are randomly generated and added to the best estimate of the missing value.  In this case, the "best estimate" is obtained via regression, and residual errors are generated from the (respondent) empiri­cal distribution of residuals.  Stochastic imputations are often preferred to other techniques because they display more realis­tic distributional properties.

The stochastic regression modelled the natural log of hourly earnings as follows:

Yi = SUM:{Bj Xij} + Ei, (1)

where the Xij's denote independent variables which are available for all (or most) cases, and Ei represents an error term.  Log hourly earnings, Yi, were indexed to constant 1967 dollars to adjust for time differentials in reported earnings.  The coeffi­cients Bj were estimated using all cases with reported Y and X.

For those cases with missing hourly rates, the regression yielded predicted hourly earnings:

yi = SUM:{bj Xij} (2)

where the bj's denote estimated regression coefficients.

For those cases with reported hourly rates, the regression produced a set of empirical residuals:

ei = Yi ‑ yi.  (3)

The empirical residuals were sorted by the log of predicted annual earnings and split into deciles.  The log of predicted annual earnings is defined by

pi = yi + Zi, (4)

where yi is the predicted log of hourly pay and Zi is the log of the annual work effort (in hours).

Imputed annualized earnings were derived in three steps.  First, an empirical residual, ei, was selected at random from the same decile as the nonresponder.  Next, imputed annualized earning, AEi, was calculated as the exponentiated sum of the predicted annualized earning and the error term:

AEi = EXP:[pi + ei] = EXP:[yi + Zi + ei]. (5)

Finally, the imputed values were reindexed to original (time dependent) dollars.

Separate regression equations were estimated for 16 of 18 subgroups[[16]](#footnote-16) in a cross‑classification of job type (CURRENT, LAST, LONGEST), employment status (self, employee), and sex/disability (three groups).  Separate equations were used to

increase pre­dictive power.  Regressions were not performed in four subgroups because of unduly small sample sizes.

The independent variables tested and included in some or all of the regression equations were:  occupation, industry, primary sampling unit, education, race/ethnicity, marital status, em­ployer type, primary insurance amount, beneficiary status, hours worked per week, weeks worked per year, job duration, age (at end of job), and respondent/spouse indicator.  Terms reflecting curvilinear and interaction relationships with the dependent variable were also investigated.

The cases with missing hourly rates which did not receive a stochastic regression imputation may be partitioned into four distinct classes:

(i) cases in the 16 subgroups which employed regression, but which displayed missing data on one or more important prespecified predictors;

(ii) cases in 2 of 18 subgroups noted in footnote 16;

(iii) cases showing losses in earnings;

(iv) cases which were not to be imputed.

Cell mean imputation was performed in classes (i) and (ii).  This technique involves the computation of the respondent mean log hourly rate within a specified subgroup (e.g., self‑employed females), and assigning this value to all cases with missing data in that group.  This was done with separate mean calcula­tions for CURRENT, LAST, and LONGEST jobs.

For cases showing losses in earnings, a respondent‑donor approach was implemented.  The cases in class (iii) were matched manually to responders who showed losses.  Matching was based on job type (2 classes), sex, occupation, industry, sample subdomain, hours worked per week, weeks worked per year, respon­dent/spouse indicator, and year of loss.  When a match was made, the donor responder's reported amount was imputed to the missing field.  Losses were imputed to 88 fields in this fashion.

Finally, cases which exhibited missing data on one or both of hours worked per week and weeks worked per year were imputed via the cell mean approach.  The cells in this scheme were the same as those described above.  Due to relatively high response rates, the amount of imputation for work effort was small.

10.2.2.  Imputation of Income Types

Missing data were imputed for 19 income types identified in Questions 165‑168, 171‑174, 182‑187, and 190‑194 of the NBS questionnaire.  The income types include specific earnings, pensions, and transfer payments presented in the second variable group of Table 10.1.  Receipt indicators and income amounts received in each of the past three months (from the time of interview) were elicited for both the respondent and spouse.  These items, as well as their quarterly counterparts, were imputed where missing.

The imputation methodology is presented in two parts.  First, the methods for imputing missing receipt indicators are described.  Next, the imputation of missing amounts is detailed.

10.2.2.1.  Imputation of Income Type Receipt

The rates of missing data of income type recipiency were small in the NBS.  This point is illustrated in the first 6 columns of Table 10.2.  Missing data ranged from 0.2 percent (42 cases) for Social Security receipt to 0.7 percent for earnings (121 cases).  Moreover, apart from five income types, the rates of recipiency among responders were all under five percent.  Consequently, subjective "best guess" imputation methodologies were employed.

Two imputation schemes were devised:  an edit routine which was implemented for Social Security, earnings and Federal pen­sion recipiencies, and a case‑by‑case transcript examination scheme used for all other income types.  The edit routines were simple.  "Yes" flags were imputed to missing Social Security receipt fields when the respondent sample subdomain (NEWSAMPT) was anything except a Medicare‑only beneficiary; a "no" flag was imputed otherwise.  Similarly, missing earnings flags were imputed "yes" if the respondent or spouse work history indicated employment within the past three months, with "no" imputed otherwise.  Finally, missing Federal pension recipiency fields were imputed "yes" if responses to the LAST or LONGEST jobs indicated Federal pension receipt, and "no" otherwise.

For the remaining income types, imputation of recipiency was performed using a case‑by‑case inspection of the interview transcript.  Imputation decisions were made, incorporating responses to related items, patterns of nonresponse, and the overall recipiency rate among responders.

10.2.2.2. Imputation of Income Type Amounts

Four methods were utilized to impute missing amounts:  benefit formula construction, cell mean, stochastic mean and stochastic regression.  Table 10.3. lists the methodology used for each income type amount.  Imputed values were calculated from approximations to the benefit formula for food stamp and Social Security benefits.  For food stamp benefits, the imputed amount was equal to the "allotment" (a function solely of house­hold size) minus 30 percent of the midpoint of the income range in Q. 246 less $85.  A minimum value of $10 was imputed to households of size one or two, in accordance with food stamp regulations.  For Social Security benefits, estimation equations conformed to specifications issued by SSA.  These imputations utilized the primary insurance amount plus other relevant data.  In all, imputed food stamp benefits were required for 11 cases, while 507 cases received Social Security benefit imputations.

Cell mean imputation was performed for nine of 19 income‑type amounts.  Ten cells were used in this process; they result from a cross tabulation of sex by recipiency type (sin­gle; married respondent only; married spouse only; respondent and spouse with separate amounts; respon­dent and spouse with combined payments).  Only small numbers of cases were imputed via the cell mean methodology, ranging from two cases for alimo­ny to 17 cases for railroad retirement income.

A smoothed‑mean/global‑mean approach was used for es­tate/trust/royalty payments.  Reported estate/trust/royalty payments were tabulated by reported total assets and total income and smoothed to produce monotonic trends.  The smoothed means were imputed to nonresponders who reported assets and income.  For those with missing data on these "predictors," the global respondent mean was assigned.  A total of 3l cases were imputed for missing estate/trust/royalty payments.

A stochastic mean approach was used for annuities income.  Here, imputations were equal to the global respondent mean plus a randomly generated error term from a normal distribution with mean zero and variance equal to that obtained from the reported annuities data.

The remaining six income types were imputed via stochastic regres­sion.  Log earnings were predicted from a regression model describing the three month earnings sum as a function of:  earnings from CURRENT job (see Section 10.2.1.), hours and weeks worked, indicator of second job during reference period, propor­tion of reference period covered by CURRENT job and respon­dent/spouse indicator.  A different equation was estimated for each reference period (i.e., last month, two months ago, three months ago).  Imputations were defined as the exponentiation of the summed regression prediction and a residual error selected at random from the empirical residuals.  For persons who report­ed no income from their CURRENT job, a cell mean approach was used to impute earnings.  Respondent means were calculated and imputed separately for single respondents, married respon­dents and spouses.  Likewise, for cases reporting losses in the CUR­RENT job, a mean value imputation of earnings was employed.  Finally, when two of the three reference period earnings were reported, their average was imputed to the missing value (except when both earnings were reported to be zero, in which case the cell mean approach was used).  Earnings were imputed to a total of 925 households.

Imputations of missing veterans benefits involved the estimation of three regression equations:  one for male respon­dents, one for male spouses, and one for single females.  The predictors for the male respon­dent equation included the VA disability rating, VA disability status, indicators of handicaps limiting and preventing employment, Social Security recipiency and income, age, education, and race/ethnicity.  The equation for spouses used all but the first two predictors mentioned above, since these data were not collected for spouses.  Final­ly, the single female equation incorporated Social Security recipiency and income, age and race/ethnicity as predictors of veterans benefits.  The stochastic error term added to the regression predictions was generated from a normal distribution with mean zero and standard error taken from that of the corre­sponding regression equation.  Fifty‑eight cases were imputed in all.

The four remaining income types are private, Federal, military, and State/local pensions.  The stochastic regression schemes for these items utilized the same general approach.  A "full" equation and a "fallback" equation were used to impute missing data, depending on the amount of predictor information available.  For each pension type, the full equation contained earnings, duration and age data regarding a job provid­ing that pension type, plus Social Security income, education, race/ethnicity and area of residence.  The fallback equation excluded the job‑specific predictors but added age.  Each equa­tion was estimated separately for males and females.  Again, the residual error term was generated from a normal distribution with mean zero and appropriate variance.

The extent to which data were imputed for each income type is summa­rized in Table 10.4.  The second column represents the total number of households for which at least one item was imputed.  The third column presents the number of households for which all amount items were imputed.  Most imputation involved the complete replacement of missing data for all three reference periods.  The last column of Table 10.4. exhibits the percentage of imputed cases.  Imputed data account for between one and 14 percent of income types.  Five income types required rates of imputation exceeding 10 percent:  railroad retirement, earnings, Federal pension, annuities, and estate/trust/royalty payments.  Four income types were imputed at a rate of three percent or less:  Social Security, Supplemental Security Income, alimony, and food stamps.

10.2.3.  Imputation of Holdings, Amounts and Incomes from Assets

Holdings indicators, values of assets and income from assets were imputed where missing in the NBS.  Questions 201 to 245 of the NBS questionnaire cover the 14 asset types treated in this section.  They include financial assets, retirement ac­counts, real property and business equity.  Table 10.1. lists the asset items subject to imputation.

The imputation methodology for assets is divided into three subsec­tions.  In the first, techniques for imputing asset hold­ings flags are described.  Once holdings were determined, asset amounts were imputed.  Thus, the second subsection reports the imputation methodology of amounts such as balances in checking accounts and equity in own home.  The third subsection discusses the various approaches used to impute missing income from as­sets.  Income returns from assets are called income flows for the remainder of this report.

10.2.3.1.  Imputation of Asset Holdings

Asset holdings flags were imputed for the 14 asset types shown in Table 10.1.  The "other property assets" item was composed of four specific property asset components:  rental housing, vacation property, commercial property, and land.  Consequently, a total of 17 asset holdings flags were processed for imputation.

Table 10.5. presents the response disposition to the hold­ings flags.  Nonresponse to these items was low, ranging from 0.2 percent for income from roomers or boarders to 4.5 percent for certificates of deposit (CD).  Generally, the accounts flags incurred the highest nonresponse.

Eight asset items in Table 10.5. pertain to home ownership, other property and equity.  The response dispositions for these items are characterized by high response rates (above 99 per­cent), and either very high or very low rates of holdings among reporters.  Subjective "best‑guess" imputation schemes were thus used for these items.  Imputation was based on multi‑way crosstabulations.  Home ownership utilized various categoriza­tions of sample subdomain, sex, and marital status; for equity assets, categorizations of employment status (self vs. employee) and occupation were used.  Cross-classifications of dwelling type, employment status, subdomain and home ownership were employed to impute other property asset holdings.

The imputation routine was implemented in two steps.  The respondent data were sorted into the cells of multiway tables described above.  Next, the rate of holdings were calculated among reporters in each cell.  Nonresponders were then placed into their respective imputation cell.  In general, if the rate of holdings within a cell was high (e.g., 96 percent), then all nonresponders in that cell were imputed as holders of that asset type.  If the holding rate was low (e.g., 10 percent), then all nonresponders were imputed nonholder status.  Roughly, 700 flags were imputed home ownership, other property or equity holdings flags.  Their distributions are shown in the last eight rows of Table 10.6.

Both respondent and spouse IRA holdings flags were imputed via a regression approach where the dependent variable was the dichotomous zero/one indicator of holding.  Separate models were estimated for five respondent groups:  retired married females, retired married males, retired single persons, disabled married persons, and disabled single persons.  The predictor variables for these models included home ownership, race/ethnicity, sample subdomain, employment status and occupation indica­tors, plus several continuous items such as age, education, earnings, and PIA.  Coefficients were estimated from the respondent data and used to calculate predictive probabilities of being a holder.  Holding status was determined by comparing the probability to a randomly generated number between 0 and 1.  If the random number was less than the expected probabil­ity of a nonresponder, then IRA ownership was imputed.

Households which failed to provide information for one of the five accounts assets typically did not respond to any ac­counts questions.  As such, it was necessary to impute entire patterns of financial asset holdings.  Seven holdings patterns were constructed from all remaining assets types:

i) neither checking nor savings,

ii) savings only,

iii) checking only,

iv) checking and savings only,

v) savings and one of the other five assets (money market, CD, credit union, bonds, stocks),

vi) checking and one of the other five assets,

vii) savings, checking and one of the other five assets.

Multiple discriminant analysis was used to impute patterns of asset holdings.  Seven discriminant functions were estimated from the respondent data.  These functions were then applied to nonresponders to yield proba­bilities corresponding to each holding pattern.  Nonresponders were assigned the pattern which displayed the highest probability.  As with the imputation of IRA holdings, equations were constructed for each of five re­spondent groups.  Independent variables included home ownership, IRA holdings, race /ethnicity, employment status, education, age, earnings, and PIA.

Once an asset pattern was assigned, it was converted into imputations of the specific components:  savings, checking, and one of the five remaining asset types.  When partial asset holdings were reported, the imputed pattern was sustained for the missing portion of the pattern.  Thus, reported data were preserved.

For the remaining five assets (namely money market, CD, and credit union accounts, stocks and bonds), holdings flags were imputed using a regression approach.  The only exception, howev­er, occurred for cases imputed as no checking and no savings.  Here, nonholding status was imputed to all five remaining assets (unless one or more of the five reported yes flags).  The linear equations included such predictors as home ownership, IRA, checking and savings indicators.  Flags indicating ownership of stocks and bonds were also included.  Other independent vari­ables were similar to those employed in the modelling of IRA flags.  Predicted probabilities based on these regression models were converted to imputed flags using the same approach as the IRA holdings imputation.

10.2.3.2.  Imputation of Asset Amounts

Response dispositions of 14 asset amounts are presented in Table 10.7.  Among households reporting asset holdings, nonresponse rates are displayed in Column 5.  Nonresponse among holdings reporters ranged from 11 percent for value of own home to 36 percent for stocks and professional practice equity.  Such high rates of nonresponse should be borne in mind when analyzing asset amounts items.

In general, the methodology employed in the imputation of missing assets amounts was stochastic regression.  A three‑step procedure was used.  First, the equity on own home was imputed (when necessary) by stochastic regressions on the market value of home and debt on home.  Secondly, the net worth excluding own home was imputed (whenever necessary) via stochastic regres­sion.  Finally, the proportion of net worth excluding own home was determined for each asset type (apart from own home) using regression.  These models were used in addition to imputed asset holdings and reported asset amounts to create the final imputa­tions.

To impute home market value, separate regression models were estimated for each of five respondent groups:  retired married females, retired married males, retired single persons, disabled married persons, and disabled single persons.  The log of the market value was the dependent variable and the independent variables were those used in the IRA regres­sion models.  A stochastic term was added to the regression prediction by draw­ing at random from the empirical distribution of the residuals result­ing from the model estimation.  This procedure is identi­cal to that used in the imputation of annual earnings in Section 10.2.1.

The debt on the home was imputed by first imputing zero versus positive debt; then, for those with positive debt, an amount was imputed.  To impute zero versus positive debt, a dichotomous regression model was estimated using the same pre­dictors employed in the market value models.  Separate equations were estimated for the five respondent groups specified above.  The regression model yielded a predicted probability of having a positive debt.  Comparison of this value to a randomly generated number determined which debt status was imputed.  If the pre­dicted probability was larger than the random number, a positive debt was imputed; otherwise, a zero debt was imputed.

To impute the amount of positive debt, regression models were estimat­ed with the dependent variable being the log of the ratio of the reported debt to the market value of the home.  The independent variables included various categorizations of race/ethnicity, sample subdomain and age, plus value of home, total income and earnings variables.  Stochastic residual terms were added to predictions in the fashion described for market value of home.

The imputation of the remaining asset amounts was based on the imputation of net worth excluding own home.  The imputation method mimicked that of market home value.  The dependent vari­able was the log of net worth exclusive of own home.  Indepen­dent variables included most of those used in the market value equations plus home value, and pension income and indicators for the 13 remaining asset types.  Five equations were estimated for each respondent group used in the market value equations.  A stochastic term was added to predicted values in a slightly more detailed fashion than that used for market value of home.

To construct imputed asset amounts, 13 models were employed to predict the proportion of net worth exclusive of home held in that asset.  Each model was estimated using a data set consist­ing of households with that particular asset and at least one other type of asset.  Here, the dependent variable was the log of the asset share.  Predictors included variables reflecting the numbers of assets held, types of assets held, combinations of assets, respondent type and net worth.  The models were not estimated separately by response group.

Predicted asset shares were calculated for each asset held for which amounts data were missing. The patterns of missing and reported assets amounts influenced the use of predicted asset shares. If all amounts were missing for held assets, the predicted asset shares were prorated to unity, and imputed net worth exclusive of home was apportioned among the missing amounts proportional to these shares. A total of 2,546 cases was handled in this fashion.

When one or more asset amounts were reported (with none of them negative), one of three imputation schemes was used. If the reported amounts were less than 80 percent of the total imputed net worth excluding home, then the difference was divid­ed among the missing amount fields in proportion to the imputed asset shares. If the reported amounts were greater than 80 percent but under four times the imputed net worth exclud­ing home, then the missing amounts were imputed solely on the basis of the predicted shares. When the sum of reported assets ex­ceeded four times the imputed net worth, imputed amounts were proportionately allotted the predicted share based on a modified asset amount. (That amount equalled the average of the reported assets amounts and four times the imputed net worth.) In total, roughly 2,700 cases were imputed in this fashion.

Finally, one of three methods was employed when any of the reported asset amounts were negative. If the reported asset amounts sum was negative, missing amounts were imputed according to the method used for households with no reported amounts. If the sum of reported assets amounts was positive but less than the imputed net worth excluding home, missing amounts were imputed as the product of predicted asset shares and imputed net worth. When the reported sum exceeded imputed net worth, the missing amounts were imputed as the product of predicted asset shares and the implied asset sum. The implied asset sum was computed as in the second of the three methods used for cases with one or more reported asset amounts.

The largest numbers of cases imputed correspond to check­ing and savings amounts (Table 10.8). However, the largest percentage of imputed nonzero amounts occurred with professional practice equity. Here, almost half the cases were imputed. Between one-fifth and one-third of nonzero asset amounts were imputed for all other asset types except respondent IRA, and equity in home and other property. It is imperative to remember that such large amounts of imputed data could possibly affect the outcome of statis­tical analyses.

10.2.3.3. Imputation of Income Flows

Income flows (i.e., income from assets) were imputed for the asset types shown in Table 10.9. Missing data for the whole sample ranged from 1.4 percent for other property to 25 percent for savings accounts (not shown). Among asset holders, however, nonresponse was much higher. (See column 5.) One-third or more of holders failed to report income flows for financial assets (except for checking) and for equity in businesses, professional practices and farms. Missing data among holders is under 10 percent for the remaining asset types.

Income flows were imputed by applying expected rates of return to the asset amounts. Expected rates of return were averaged observed rates of return estimated within ranges of asset amounts. Stochastic components were added to them as well. For all assets, a zero versus positive income indicator was first imputed. Imputed income flows were then calculated among those with positive income flags.

For the IRA (respondent and spouse) and other property rent income flows, a regression approach was used to predict positive income flow. Predictors included 1) age, disability status and sample subdomain indica­tors for IRAs, and 2) income, PIA, occu­pation, race, property type, employment status and sample subdomain for other property assets. Predict­ed probabilities were compared to randomly generated probabilities to determine positive income status.

The procedure to determine positive versus zero income flows for the remaining asset types was simpler. Proportions of households with no income from assets were calculated for ranges of asset amounts in each asset type. Income flags were then determined by comparing a randomly generated probability to the observed proportion in the same asset range with no income from those assets. If the random probability was less than the observed proportion, an asset income of zero was imputed. Otherwise, a positive asset amount was imputed.

To impute positive income flows for all asset types, the expected log rate of return was calculated as the sum of a mean log rate and the product of a random normal deviate and a stan­dard deviation. The imputed income flow is equal to the product of the reported asset amount and the exponentiation of the expected log rate of return.

Income flows from financial assets contained the largest number of cases imputed (Table 10.10). Roughly, one to four thousand cases were imputed for these assets. Apart from checking, the ac­counts assets have nonzero income flows imputed for almost 40 percent of the cases. Almost two-thirds of nonzero income and over two-thirds of "zero" income from bonds have been imputed. These rates of imputed data are high and should alert the ana­lyst to take caution when drawing inferences from this data.

10.2.4. Imputation of Expected Future Pension and Miscellaneous Income Items

This section describes the imputation of expected future pension and three miscellaneous income items. Expected future monthly payments from pensions were imputed for each of the CURRENT, LAST, and LONGEST jobs of the respondent and spouse. Expected recipiency flags for future pensions were not imputed. Future monthly payments were imputed whenever the individual was not currently receiving a pension from that job and expected to receive or did not know about a pension from that job in the future. Pensions were not imputed if future pension recipiency was missing.

The three income types requiring imputation were income from boarders, income from repayments of a personal loan and other income. Both recipiency flags and amounts were imputed for these items. A single payment covering the 12 months preceding the interview was imputed for loan income. Monthly payments for each of the three months immediately preced­ing the interview were imputed for the other two income amount items.

10.2.4.1. Imputation of Expected Future Pension

Table 10.11. presents the response disposition for the expected future pension recipiency questions asked of the re­spondent and spouse. Separate distributions are provided for each job type. The first column represents all cases for which imputation was performed. Pension amounts were imputed for roughly 2,000 respondents and spouses across three job types. Slightly over half of the imputations occurred for the expected pension from CURRENT job; under one-tenth occurred for the LONGEST job.

Expected future pension payments were imputed using a model of wage replacement. Wage replacement was estimated among current pension recipi­ents who reported pensions for LAST or LONGEST jobs. Wage replacement rates were defined as the ratio of monthly pension to the average monthly salary for that job. This was done separately for private, State/local, Federal civilian and military employer types. A regression equation was then estimated with the log wage replacement rate as the depen­dent vari­able. Predictors included industry, occupation, job duration, employer type, and education. Separate equations were employed for males and females. Expected future monthly pension was imputed as

the product of the predicted wage replacement rate and the average monthly salary. A stochastic term was not utilized.

10.2.4.2. Imputation of Miscellaneous Income Receipt Flags

The first three columns of Table 10.12. display the response disposi­tion to the recipiency flags for three miscellaneous income types. Missing data rates were very small--one percent or lower. The third column represents the number of cases requiring imputation.

The recipiency flag for income from boarders was imputed on the basis of a crosstabulation of home ownership, dwelling type, and a categorization of respondent status. Recipiency rates among reporters were observed in each cell. Next, nonresponders were sorted into these imputation cells. Nonreceipt was imputed to all cases except those falling into cells with relatively "high" rates of recipiency. The last two columns of Table 10.12. show that three cases were imputed recipients and 43 were imputed nonrecipients.

Flags for loan income and other income were imputed via stochastic regression. Predictors included home ownership, financial asset holdings, respondent status, home value, income, pensions, and PIA. Estimated equations yielded predicted proba­bilities of being a recipient. Recipiency was imputed when a randomly generated probability was less than the predicted probability. The last two columns of Table 10.12. give the distribution of imputed recipiency flags.

10.2.4.3. Imputation of Miscellaneous Income Amounts

The first four columns of Table 10.13. present the disposi­tion of responses to three income amounts. Rates of nonresponse were low, ranging 0.3 to 1.5 percent. After imputation of recipiency status to the three income types, slightly over 200 fields required imputation of income amounts. (See Column 6.)

The amounts for all three income types were imputed via stochastic regression. The dependent variables for the regres­sions were the logs of income amounts. The independent vari­ables for loan income and other income were identical to those used in the recipiency flag equations. The income from boarders model employed home ownership, home values and income as predic­tors. A stochastic term was added to each regression predic­tion. The term was calculated as the product of a standard normal deviate and the standard error of the regression equa­tion.

Up to three monthly amounts were imputed for income from boarders and other income. The same regression based amount was imputed to each missing month. When one or two months had nonzero reported amounts, the average reported amount was as­signed to the missing month(s).

The last two columns of Table 10.13. display the imputation decisions for each income type. Inapplicables represent cases with missing recipiency and amounts which were imputed as nonrecipients. Income from loans and other income accounted for most imputed values. Among reported and imputed recipients, imputations comprised 7.3 percent (18/247), ll.2 percent (90/804), and 9.5 percent (103/1079) of amounts from boarder income, loan income and other income, respectively.

10.2.5. Estimating Net Rent

Question 234 asked for the respondent's best estimate of total income from rental properties. A question on income from rental properties net of expenses was inadvertently omitted from the questionnaire. A correction factor to transform gross revenue to net revenue was estimated by regress­ing net rent on gross rent using data from the Income Survey Development Pro­gram. The equation used was y = 69.2 - .344x where x is the percen­tile of gross rent and y is the correction factor.

10.3 Imputation in the NBF

The imputation procedures for the NBF closely replicated the proce­dures for the NBS. This section will note differences. Tabulations of missing income and asset items are presented in Table 10.2, Table 10.5, Table 10.7, and Table 10.9. These tabulations include a group of supple­mentary interviews to respondents who were in the NBF but not in the NBS. Consequent­ly, the tabulations are suggestive of differences between the NBS and NBF. In general, slightly more income data were missing in the NBF than were missing in the NBS (see Table 10.2 and Table 10.9). The preva­lence and amount of asset holdings were fairly similar between the NBS and NBF (see Table 10.5 and Table 10.7).

11. ADMINISTRATIVE DATA

11.1 Introduction

The NBDS contains administrative data from Social Security Administration and Health Care Financing Administration records. The objective was to create a longitudinal data series that included earnings, benefits, and Medicare bills for the decade of the 1980's. The social security information refers to both the respondent and the spouse. It includes annual covered earnings from 1951 through 1991 and annual benefit information from 1980 through 1991. Payment status under Supplemental Secu­rity Income is also identified for a few important NBDS dates. The Health Care Financing Administration data are for respondents only from 1984-1991, including aggregated annual bills, coverage, and Health Maintenance Organization status. The following sections briefly discuss properties of the data from each series.

11.2 Annual Covered Earnings

The annual covered earnings for respondents and spouses of respondents comes from the Social Security Administration's Summary Earnings Record (SER). In order to preserve confidenti­ality, the covered earnings in each year were rounded to 4 significant digits with left justification. Information on covered earnings come from employer-reported tax forms. The SER omits earnings from noncovered employment and nonreported earnings. In each year, covered earnings are limited by a taxable maximum above which social security taxes are not owed. The taxable maximum varied substantially over time from near the national average earnings in 1965 to over twice the national average earnings after the mid-1970's.[[17]](#footnote-17)

11.3 Social Security Benefits

The benefit status for respondents and spouses of respondents comes from the Social Security Administration's Master Beneficiary Record of December, 1980-1990. The Bene­fit Identification Code (BIC) indicates the type of benefit and the Ledger Account File (LAF) indicates the payment status. In the NBDS, persons currently paid benefits have a LAF code of 22 or 32. The Primary Insurance Amount (PIA) is the basic social security benefit amount before any actuarial adjustments, and the Monthly Benefit Amount (MBA) is the amount paid. The PIA and MBA reflect annual indexing for inflation in most years in effect for the next calendar year. NMPME identifies the number of months for which benefits were paid in the calendar year.

A more complete set of information from the Master Beneficiary Record for February 1991 and February 1992 is included. The February 1991 data refers to respondents and spouses at the beginning of the NBF interview period, and the February 1992 data refers to respondents and spouses near the end of the NBF inter­view period. Probably the most noteworthy additions in 1991 and 1992 concern dual entitlement to both earned retirement benefits and auxiliary benefits as a spouse or widow(er). In the dually entitled data fields, the smaller amount refers to the person's own earned retirement benefits, and the larger amount refers to the benefit from their spouse's earn­ings. The expanded data also contain information on family benefits and on dates of entitlement and termination.

Finally, the birth and death dates are identified from the Master Beneficiary Record of March, 1994. Because reporting of deaths can be delayed, this variable is a more complete indi­cation of deaths through 1992. However it does not completely capture deaths that occurred in late 1993.

11.4 Supplemental Security Income

Supplementary Security Income (SSI) pays benefits to aged, blind and disabled persons who meet low asset and low income requirements. Because the NBDS sampled Title II beneficiaries, the NBDS omits SSI beneficiaries who were not eligible for Title II benefits as retired workers, disabled workers, aged spouses, or aged widows. The NBDS contains summary SSI information from the Social Security Administration's Supplemental Security Record of March 1993. The information identifies date of appli­ca­tion, date of denial of benefits, and payment status for respondents and spouses of respondents in December of 1991, 1986, 1982, and 1979.

11.5 Medicare

The NBDS contains summary Medicare information for respon­dents derived from the records of the Health Care Finance Administration (HCFA) for 1984 through 1991. Hospital days, admission dates,and charges were estimated for each year from the Medicare Automated Data Retrieval System (MADRS). After eliminating duplications and bills for zero charges, individual bills were aggregated to create annual estimates for each re­spondent. Separate aggregations were made for inpatient charges, skilled nursing charges, home health care charges, outpatient charges, and physician charges. Charges were adjusted to 1984 dollars using the Medical Care Component for Urban Consumers in the Consumer Price Index. The months of coverage under Medicare Part A and Medicare Part B come from the Denominator File main­tained by HCFA. Health Maintenance Organization membership was also summarized from the Denominator File as follows: never a member, always a risk basis member, always a cost basis member, and a mixture of risk and cost basis memberships. Note that MADRS does not include Part B bills for cost basis members, and MADRS does not include bills for risk basis members. Thus, HMO members without MADRS bills may have had expenses covered by Medicare, but not measured in MADRS. Because eligibility for skilled nursing care is very selective, skilled nursing bills do not represent nursing home expenses in the general population.

**Table 1.1: The 1982 NBS Sample and Outcomes in the 1991 NBF**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­\_\_\_\_\_\_\_\_\_**

**Beneficiary Status in the 1982 NBS**

**Mortality and Total**

**Interview Status, Aged Beneficiaries Disabled Recipi­ents**

**1991 NBF Retired Wives or Worker of Medicare**

**Workers Widows Only**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Total interviewed in NBS\* 18,136 9,103 2,417 5,172 1,444**

**Respondent deceased by NBF\*\*.. 4,279 1,992 380 1,602 305**

**Abbreviated interview**

**with surviving spouse...... 1,834 886 75 720 153**

**Respondent alive at NBF....... 13,857 7,111 2,037 3,570 1,139**

**Completed interview......... 12,128 6,239 1,754 3,161 974**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\* Excludes small number who were found to have received aged benefits prior to 1980-81.**

**\*\* Preliminary data.**

**Table 2.1.  New Beneficiary Survey Universe and Completed Interviews**

**MBR Universe1**

**New Still**

**Beneficiaries Alive**

**in 12‑Month at Completed Survey Universe**

**Window Extraction Interviews2 (in thousands)3**

**Total**

**Beneficiaries 1,927,195 1,860,347 17,155 1,805.1**

**Retired**

**Workers 1,298,047 1,274,789 9,519 1,244.0**

**Men 734,129 716,510 5,307 692.4**

**Women 563,918 558,279 4,212 551.6**

**Disabled**

**Workers 281,314 242,257 5,198 224.8**

**Men 199,599 171,655 3,593 159.0**

**Women 81,715 70,602 1,605 65.8**

**Spouses**

**Wives 216,361 213,332 1,041 209.4**

**Widows 116,639 115,356 975 113.4**

**Divorced Wives 5,618 5,517 210 5.3**

**Surviving**

**Divorced Wives 9,216 9,096 212 8.9**

**Nonbeneficiaries**

**(Medicare only) na 257,286 1,444 254.5**

**Total Completed Interviews 18,599**

**1New beneficiary universe was extracted in March 1982.  Nonbeneficiary universe was extracted in July 1982.  For all but disabled workers, 12‑month window is June 1980 ‑ May 1981.  For disabled workers, the window starts one month later, July 1980 ‑ June 1981. The total benefi­ciaries and the nonbeneficiaries, when combined, do not represent a meaningful total universe.**

**2Completed during October through December 1982.**

**3The size of the survey universe (living, noninstitutionalized persons at the time of the survey who were in the MBR universe) is estimated based on reasons for noninterview (death or institutionalized) obtained in the survey.  These numbers are based on weighted sample results obtained between October and December 1982.**

**Table 3.1.  Sampling Rates for Categories of Respondents**

**Ratio,**

**Desired Popula‑ Sampling Intervals**

**Number tion to (1 in):**

**of Popula‑ Sample**

**Sample Subdomain Interviews tion Size Size Original Final**

**Retired Workers**

**Male, Aged**

**62 years 1,350 340,998 253.0 155.2 212.6**

**63‑64 years 1,350 195,564 145.0 83.7 114.7**

**65 years 1,300 112,418 86.5 48.9 67.0**

**66+ years 1,000 67,540 67.5 38.5 52.7**

**Female, Aged**

**62 years 1,200 348,099 290.0 172.4 236.2**

**63‑64 years 1,000 120,986 121.0 69.5 95.2**

**65 years 1,000 64,505 64.5 36.8 50.4**

**66+ years 800 24,689 30.9 17.4 23.8**

**Disabled Workers**

**Male 3,450 171,655 49.8 29.5 40.4**

**Female 1,550 70,602 45.5 28.4 38.9**

**Spouses**

**Wives 1,000 213,332 213.0 124.4 170.4**

**Widows 950 115,356 121.0 72.0 98.6**

**Divorced Wives 200 5,517 27.6 16.5 22.6**

**Surviving**

**Divorced Wives 200 9,096 45.5 25.1 34.4**

**Medicare 1,500 257,286 171.5 98.0 140.0**

**NOTE:  The original sampling intervals were set approximately equal to the population size divided by 1.75 times the desired number of interviews.**

**The final sampling intervals were equal to the original sampling intervals divided by 0.73 for all groups except the Medicare group.  The Medicare group has a sampling interval equal to the original one divided by 0.70; this reflects the use of only the main sample.  For the other groups, a reserve sample replicate equal to 10 percent of the total reserve was used (0.7 + 0.1 x 0.3 = 0.73).**

**Table 3.2.  Final Disposition of the New Beneficiary Survey**

**by Sample Subdomain**

**DISPOSITION RESPONSE NONRESPONSE OTHER**

**Sample Eligibility Not Total**

**Subdomain Interviewed1 Eligible Unknown2 Eligible3 Selected**

**(1) (2) (3) (4) (5)**

**Retired Workers**

**Male, Aged**

**62 years 1,442 52 142 37 1,673**

**63‑64 years 1,466 65 114 53 1,698**

**65 years 1,388 66 150 47 1,651**

**66+ years 1,011 57 144 53 1,265**

**Female, Aged**

**62 years 1,319 67 133 19 1,538**

**63‑64 years l,074 46 139 16 1,275**

**65 years 1,045 61 152 25 1,283**

**66+ years 774 59 141 35 1,009**

**Disabled Workers**

**Male 3,593 160 333 290 4,376**

**Female 1,605 60 144 127 1,936**

**Spouses**

**Wives 1,041 57 123 22 1,243**

**Widows 975 58 136 19 1,l88**

**Divorced Wives 210 11 14 11 246**

**Surviving**

**Divorced Wives 212 14 26 6 258**

**Medicare 1,444 81 253 17 1,795**

**Total 18,599 914 2,144 777 22,434**

**1The distribution of sample type shown here differs from that of the final NBS data file due to revisions made in assigning sample type to respon­dents.**

**2Eligibility of a selected beneficiary is considered unknown if a screen­ing form was not completed.**

**3Ineligibles include those persons who were deceased, who were institution­alized, who received first payment prior to that specified in the study population, etc.**

**Table 4.1.  Response Rates for the New Beneficiary Survey**

**by Sample Subdomain**

**Overall**

**Screening Interview Response**

**Initial Rate2 Screened Rate3 Rate4**

**Sample1 (in Sample (in (in**

**Sample Subdomain Size percent) Size percent) percent)**

**Retired Workers 11,107 90.0 9,992 95.3 85.7**

**Male, Age:  6,097 91.0 5,547 95.7 87.0**

**62 1,636 91.3 1,494 96.5 88.1**

**63‑64 l,645 93.1 1,531 95.8 89.1**

**65 1,604 90.6 1,454 95.5 86.5**

**66+ 1,212 88.1 1,068 94.7 83.4**

**Female, Age:  5,010 88.7 4,445 94.8 84.1**

**62 1,519 91.2 1,386 95.2 86.8**

**63‑64 1,259 89.0 1,120 95.9 85.3**

**65 1,258 87.9 1,106 94.5 83.1**

**66+ 974 85.5 833 92.9 79.5**

**Disabled Workers 5,895 91.9 5,418 95.9 88.2**

**Male 4,086 91.9 3,753 95.7 87.9**

**Female 1,809 92.0 1,665 96.4 88.7**

**Spouses 2,877 89.6 2,578 94.6 84.7**

**Wives 1,221 89.9 1,098 94.8 85.3**

**Widows 1,169 88.4 1,033 94.4 83.4**

**Divorced Wives 235 94.0 221 95.0 89.4**

**Surviving**

**Divorced Wives 252 89.7 226 93.8 84.1**

**Medicare 1,778 85.8 1,525 94.7 81.2**

**Total 21,657 90.1 19,513 95.3 85.9**

**1Cases found to be ineligible are excluded from the sample sizes.**

**2Calculations based on initial sample sizes.**

**3Calculations based on screened eligible sample sizes.**

**4Calculations based on initial sample sizes which imply that all un­screened cases were eligible; in other words, a conservative rate is produced.**

**Table 4.2. -- The NBS Sample and Outcomes in the NBF**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Mortality Total Beneficiary Status in the NBS**

**and Interview**

**Status, NBF Aged Beneficiaries Disabled Recipients**

**Retired Wife or Widow Worker Bene- of Medicare**

**Workers Beneficiaries ficiaries Only**

**Men Women Wiv. Wid. Div. Men Women Men Women**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Total number interviewed in NBS[[18]](#footnote-18) ......18,136 5284 3819 1041 956 420 3593 1579 1202 242**

**Weighted number, in thousands.......... 2,027 960 524 209 111 14 159 65 212 43**

**Mean age in NBS........................ 64.2 65.7 65.1 65.2 63.5 64.8 53.0 52.8 67.8 67.7**

**Respondent deceased by NBF[[19]](#footnote-19) ................. 4,279 1400 592 153 148 79 1199 403 272 33**

**Percent deceased........................... 23.6 26.5 15.5 14.7 15.5 18.8 33.4 25.5 22.6 13.6**

**Abbreviated interview completed with**

**surviving spouse....................... 1,834 739 147 71 3 1 611 109 145 8**

**Respondent alive at NBF ..................... 13,857 3884 3227 888 808 341 2394 1176 930 209**

**Completed interview........................ 12,128 3428 2811 767 697 290 2112 1049 792 182**

**As percent of NBS respondents............ 66.9 64.9 73.6 73.7 72.9 69.0 58.8 66.4 65.9 75.2**

**As percent of surviving NBS respondents.. 87.5 88.3 87.1 86.4 86.3 85.0 88.2 89.2 85.2 87.1**

**Contacted, but didn't complete interview... 1,380 403 369 108 94 43 153 73 113 24**

**Refused.................................. 1,306 386 349 104 92 42 137 68 107 21**

**Other reason for non-completion.......... 74 17 20 4 2 1 16 5 6 3**

**Couldn't be contacted...................... 331 51 45 11 17 8 124 52 21 2**

**Other reason for non-interview............. 18 2 2 2 0 0 5 2 4 1**

**Table 6.1.  Basic and Post‑Stratification Weights in the New Beneficiary Survey‑**

**Basic Sampling Post‑Stratification**

**Subdomain of Study Weight Weight Adjustment**

**Male Retired Workers:**

**1. Age 62 212.6 1.048**

**2. Age 63‑64 114.7 0.998**

**3. Age 65 67.0 0.984**

**4. Age 66 and older 52.7 0.987**

**Female Retired Workers:**

**5. Age 62 236.2 1.038**

**6. Age 63‑64 95.2 1.001**

**7. Age 65 50.4 1.003**

**8. Age 66 and older 23.8 1.045**

**Disabled Workers:**

**9. Male 40.4 1.039**

**10. Female 38.9 1.075**

**Spouses:**

**11. Wives 170.4 0.992**

**12. Widows 98.6 1.016**

**13. Divorced Wives 22.6 1.120**

**14. Surviving Divorced Wives 34.4 0.991**

**15. Medicare 140.0 1.024**

**Table 6.2.  Nonresponse Weighting Cells Employed**

**in Calculating Final and Interim Weights**

**in the New Beneficiary Survey**

**Final**

**PSU PIA Weight**

**Sample Subdomain Recode Cell (Quartiles) Cell**

**MEDICARE NSR RURAL FIRST THREE 1**

**MEDICARE NSR RURAL FOURTH 2**

**MEDICARE SR GOOD ALL 3**

**MEDICARE NSR SMSA FIRST THREE 4**

**MEDICARE NSR SMSA ALL 5**

**MEDICARE SR POOR FIRST THREE 6**

**MEDICARE SR POOR ALL 7**

**MALE RETIRED WORKERS NSR RURAL FIRST 8 (AGE‑62)**

**MALE RETIRED WORKERS NSR RURAL SECOND 9 (AGE‑62)**

**MALE RETIRED WORKERS NSR RURAL THIRD 10 (AGE‑62)**

**MALE RETIRED WORKERS NSR RURAL FOURTH 11 (AGE‑62)**

**MALE RETIRED WORKERS SR GOOD FIRST, SECOND 12**

**(AGE‑62)**

**MALE RETIRED WORKERS SR GOOD THIRD, FOURTH 13**

**(AGE‑62)**

**MALE RETIRED WORKERS NSR SMSA ALL 14**

**(AGE‑62)**

**MALE RETIRED WORKERS SR POOR FIRST 15**

**(AGE‑62)**

**MALE RETIRED WORKERS SR POOR LAST THREE 16**

**(AGE‑62)**

**Table 6.2. (Continued)**

**Final**

**PSU PIA Weight**

**Sample Subdomain Recode Cell (Quartiles) Cell**

**MALE RETIRED WORKERS NSR RURAL ALL 17**

**(AGE 63‑64)**

**MALE RETIRED WORKERS SR GOOD FIRST 18**

**(AGE 63‑64)**

**MALE RETIRED WORKERS SR GOOD SECOND, THIRD 19**

**(AGE 63‑64)**

**MALE RETIRED WORKERS SR GOOD FOURTH 20**

**(AGE 63‑64)**

**MALE RETIRED WORKERS NSR SMSA ALL 21**

**(AGE 63‑64)**

**MALE RETIRED WORKERS SR POOR FIRST 22**

**(AGE 63‑64)**

**MALE RETIRED WORKERS SR POOR SECOND 23**

**(AGE 63‑64)**

**MALE RETIRED WORKERS SR POOR THIRD, FOURTH 24**

**(AGE 63‑64)**

**MALE RETIRED WORKERS NSR RURAL FIRST THREE 25**

**(AGE 65)**

**MALE RETIRED WORKERS NSR RURAL FOURTH 26**

**(AGE 65)**

**MALE RETIRED WORKERS SR GOOD FIRST THREE 27**

**(AGE 65)**

**MALE RETIRED WORKERS SR GOOD FOURTH 28**

**(AGE 65)**

**MALE RETIRED WORKERS NSR SMSA FIRST THREE 29**

**(AGE 65)**

**MALE RETIRED WORKERS NSR SMSA FOURTH 30**

**(AGE 65)**

**MALE RETIRED WORKERS SR POOR FIRST THREE 31**

**(AGE 65)**

**Table 6.2. (Continued)**

**Final**

**PSU PIA Weight**

**Sample Subdomain Recode Cell (Quartiles) Cell**

**MALE RETIRED WORKERS SR POOR FOURTH 32**

**(AGE 65)**

**MALE RETIRED WORKERS NSR RURAL FIRST, SECOND 33**

**(AGE 66 AND OLDER)**

**MALE RETIRED WORKERS NSR RURAL THIRD, FOURTH 34**

**(AGE 66 AND OLDER)**

**MALE RETIRED WORKERS SR GOOD FIRST THREE 35**

**(AGE 66 AND OLDER)**

**MALE RETIRED WORKERS SR GOOD FOURTH 36**

**(AGE 66 AND OLDER)**

**MALE RETIRED WORKERS NSR SMSA FIRST, SECOND 37**

**(AGE 66 AND OLDER)**

**MALE RETIRED WORKERS NSR SMSA THIRD, FOURTH 38**

**(AGE 66 AND OLDER)**

**MALE RETIRED WORKERS SR POOR ALL 39**

**(AGE 66 AND OLDER)**

**FEMALE RETIRED WORKERS NSR RURAL ALL 40**

**(AGE 62)**

**FEMALE RETIRED WORKERS SR GOOD FIRST 41**

**(AGE 62)**

**FEMALE RETIRED WORKERS SR GOOD LAST THREE 42**

**(AGE 62)**

**FEMALE RETIRED WORKERS NSR SMSA ALL 43**

**(AGE 62)**

**FEMALE RETIRED WORKERS SR POOR ALL 44**

**(AGE 62)**

**FEMALE RETIRED WORKERS NSR RURAL ALL 45**

**(AGE 63‑64)**

**FEMALE RETIRED WORKERS SR GOOD ALL 46**

**(AGE 63‑64)**

**Table 6.2. (Continued)**

**Final**

**PSU PIA Weight**

**Sample Subdomain Recode Cell (Quartiles) Cell**

**FEMALE RETIRED WORKERS NSR SMSA FIRST, SECOND 47**

**(AGE 63-64)**

**FEMALE RETIRED WORKERS NSR SMSA THIRD, FOURTH 48**

**(AGE 63-64)**

**FEMALE RETIRED WORKERS SR POOR ALL 49**

**(AGE 63‑64)**

**FEMALE RETIRED WORKERS NSR RURAL FIRST 50**

**(AGE 65)**

**FEMALE RETIRED WORKERS NSR RURAL LAST THREE 51**

**(AGE 65)**

**FEMALE RETIRED WORKERS SR GOOD FIRST THREE 52**

**(AGE 65)**

**FEMALE RETIRED WORKERS SR GOOD FOURTH 53**

**(AGE 65)**

**FEMALE RETIRED WORKERS NSR SMSA FIRST 54**

**(AGE 65)**

**FEMALE RETIRED WORKERS NSR SMSA LAST THREE 55**

**(AGE 65)**

**FEMALE RETIRED WORKERS SR POOR FIRST 56**

**(AGE 65)**

**FEMALE RETIRED WORKERS SR POOR SECOND, THIRD 57**

**(AGE 65)**

**FEMALE RETIRED WORKERS SR POOR FOURTH 58**

**(AGE 65)**

**FEMALE RETIRED WORKERS NSR RURAL ALL 59**

**(AGE 66 AND OLDER)**

**FEMALE RETIRED WORKERS SR GOOD FIRST 60**

**(AGE 66 AND OLDER)**

**FEMALE RETIRED WORKERS SR GOOD SECOND, THIRD 61**

**(AGE 66 AND OLDER)**

**Table 6.2. (Continued)**

**Final**

**PSU PIA Weight**

**Sample Subdomain Recode Cell (Quartiles) Cell**

**FEMALE RETIRED WORKERS SR GOOD FOURTH 62**

**(AGE 66 AND OLDER)**

**FEMALE RETIRED WORKERS NSR SMSA FIRST, SECOND 63**

**(AGE 66 AND OLDER)**

**FEMALE RETIRED WORKERS NSR SMSA THIRD, FOURTH 64**

**(AGE 66 AND OLDER)**

**FEMALE RETIRED WORKERS SR POOR ALL 65**

**(AGE 66 AND OLDER)**

**MALE DISABLED WORKERS NSR RURAL ALL 66**

**MALE DISABLED WORKERS SR GOOD FIRST 67**

**MALE DISABLED WORKERS SR GOOD LAST THREE 68**

**MALE DISABLED WORKERS NSR SMSA FIRST THREE 69**

**MALE DISABLED WORKERS NSR SMSA FOURTH 70**

**MALE DISABLED WORKERS SR POOR ALL 71**

**FEMALE DISABLED WORKERS NSR RURAL ALL 72**

**FEMALE DISABLED WORKERS SR GOOD ALL 73**

**FEMALE DISABLED WORKERS NSR SMSA ALL 74**

**FEMALE DISABLED WORKERS SR POOR ALL 75**

**WIVES NSR RURAL FIRST THREE 76**

**WIVES NSR RURAL FOURTH 77**

**WIVES SR GOOD FIRST, SECOND 78**

**WIVES SR GOOD THIRD, FOURTH 79**

**WIVES NSR SMSA FIRST THREE 80**

**WIVES NSR SMSA FOURTH 81**

**WIVES SR POOR FIRST, SECOND 82**

**Table 6.2. (Continued)**

**Final**

**PSU PIA Weight**

**Sample Subdomain Recode Cell (Quartiles) Cell**

**WIVES SR POOR THIRD 83**

**WIVES SR POOR FOURTH 84**

**WIDOWS NSR RURAL FIRST, SECOND 85**

**WIDOWS NSR RURAL THIRD, FOURTH 86**

**WIDOWS SR GOOD FIRST, SECOND 87**

**WIDOWS SR GOOD THIRD, FOURTH 88**

**WIDOWS NSR SMSA ALL 89**

**WIDOWS SR POOR ALL 90**

**DIVORCED WIVES NSR RURAL ALL 91**

**DIVORCED WIVES SR GOOD ALL 92**

**DIVORCED WIVES NSR SMSA ALL 93**

**DIVORCED WIVES SR POOR ALL 94**

**SURVIVING DIVORCED WIVES NSR RURAL ALL 95**

**SURVIVING DIVORCED WIVES SR GOOD ALL 96**

**SURVIVING DIVORCED WIVES NSR SMSA ALL 97**

**SURVIVING DIVORCED WIVES SR POOR ALL 98**

**Table 7.1.  Illustration of the Use of Half‑Sample Replicates‑**

**to Produce Estimates of Sampling Error**

**in the New Beneficiary Survey**

**Monthly Replicate Half‑Sample Indicators**

**Case Pension**

**# Income (in**

**Dollars) 1 2 3 4 5 6 7 8**

**1 90 1 0 0 1 0 1 1 0**

**2 75 0 0 1 1 1 0 0 1**

**3 100 1 1 0 0 1 0 1 0**

**4 110 0 1 1 0 0 1 0 1**

**5 85 1 1 1 0 0 1 0 0**

**6 93 0 0 0 1 1 0 1 1**

**7 79 0 1 1 1 0 0 1 0**

**8 87 1 0 0 0 1 1 0 1**

**9 98 1 0 1 1 1 0 0 0**

**10 80 0 1 0 0 0 1 1 1**

**ts = 89.7 ti 92.0 90.8 89.4 87.0 90.6 90.4 88.4 89.0**

**(ti ‑ ts)2 5.29 1.21 0.09 7.29 0.81 0.49 1.69 0.49**

**Var(ts) = {SUM:(ti ‑ ts)2}/8 = 17.36/8 = 2.17**

**SE(ts) = (2.17)1/2 = 1.473**

**Note:  ts is the mean in this example.**

**Table 7.2.  Illustration of Half‑Sample Means and Sampling Error**

**of the Average Quarterly Social Security Benefit Among**

**Retired Male Workers in the New Beneficiary Survey**

**Replicate Weighted No.  Unweighted No.  Average Quarterly1**

**Half‑Sample Valid Cases2 Valid Cases Social Security Benefit**

**1 332,986 2,562 1,883.040**

**2 330,110 2,525 1,901.755**

**3 334,304 2,564 1,884.310**

**4 343,032 2,613 1,899.025**

**5 330,243 2,533 1,888.202**

**6 349,646 2,618 1,854.245**

**7 337,660 2,620 1,866.787**

**8 341,960 2,613 1,915.330**

**9 330,865 2,536 1,879.694**

**10 338,345 2,605 1,873.365**

**11 345,656 2,631 1,894.561**

**12 337,213 2,536 1,893.531**

**13 338,277 2,584 1,879.818**

**14 336,059 2,540 1,890.200**

**15 335,403 2,550 1,907.820**

**16 336,717 2,600 1,893.217**

**17 342,390 2,600 1,872.482**

**18 344,733 2,636 1,886.245**

**19 336,829 2,587 1,881.819**

**20 335,638 2,546 1,875.155**

**21 337,353 2,555 1,882.475**

**Table 7.2 (Continued)**

**Replicate Weighted No.  Unweighted No.  Average Quarterly1**

**Half‑Sample Valid Cases2 Valid Cases Social Security Benefit**

**22 336,419 2,552 1,875.847**

**23 341,164 2,609 1,884.312**

**24 340,747 2,597 1,880.774**

**25 339,444 2,588 1,902.115**

**26 338,115 2,584 1,894.136**

**27 339,704 2,576 1,869.776**

**28 343,557 2,608 1,893.176**

**29 343,059 2,596 1,872.393**

**30 342,316 2,603 1,881.808**

**31 341,517 2,573 1,856.230**

**32 352,284 2,662 1,843.900**

**33 345,746 2,655 1,889.270**

**34 346,525 2,641 1,863.071**

**35 346,139 2,651 1,872.003**

**36 340,306 2,571 1,868.848**

**37 332,425 2,558 1,858.274**

**38 337,767 2,550 1,872.923**

**39 333,611 2,564 1,890.516**

**40 343,613 2,588 1,891.287**

**41 341,526 2,607 1,870.780**

**42 338,831 2,606 1,887.859**

**43 338,720 2,571 1,855.130**

**44 341,130 2,612 1,892.467**

**45 338,850 2,597 1,895.446**

**Table 7.2 (Continued)**

**Replicate Weighted No.  Unweighted No.  Average Quarterly1**

**Half‑Sample Valid Cases2 Valid Cases Social Security Benefit**

**46 344,013 2,611 1,877.722**

**47 344,982 2,621 1,855.412**

**48 348,910 2,634 1,854.479**

**49 347,986 2,654 1,870.969**

**50 340,646 2,592 1,897.335**

**51 336,216 2,573 1,910.518**

**52 337,603 2,574 1,883.519**

**Total Sample 679,973 5,182 1,880.979**

**Vary = (1/52) {SUM:(yi ‑ ys)2} = 243.09**

**SEy = 15.59**

**where ys is the total sample average.**

**1This variable is defined as the quarterly Social Security Benefit (V1486, QSS).  Averages shown here are for those who received nonzero amounts and did not receive Social Security jointly with railroad retirement income.**

**2Valid cases include only those which showed nonzero, nonmissing amounts.  For illustrative purposes, retired‑worker men are defined by sample types (the variable number V1850 SAMPTYPE) equalling 1,2,3,4.**

**Table 9.1.  List of Critical Items1 for the**

**New Beneficiary Survey**

**Question # Content**

**Marital Status/Household Composition**

**1 Marital Status**

**Job History**

**9 Currently Working**

**10 Year Last Worked**

**12 Date R Stopped Work (Last or Longest Employer)**

**13 Date R Started Working (Current/Last/Longest)**

**Current Job**

**17 Employed/Self‑Employed**

**22 Hours Worked per Week**

**23 Weeks Worked per Year (Self‑Employed)**

**24 Salary (Self‑Employed)**

**26 Keogh Account (Self‑Employed)**

**27 Employment Status (Employee)**

**32 Hours Worked per Week (Employee)**

**33 Hours Worked per Year (Employee)**

**34 Salary (Employee)**

**40 Retirement Plan (Employee)**

**43 Receiving Retirement Benefits (Employee)**

**Last Employment**

**51 Employed/Self‑Employed**

**56 Hours Worked per Week (Self‑Employed)**

**57 Weeks Worked per Year (Self‑Employed)**

**58 Salary (Self‑Employed)**

**60 Keogh Account (Self‑Employed)**

**61 Employment Status (Employee)**

**67 Weeks Worked per Year (Employee)**

**68 Salary (Employee)**

**69 F.I.C.A. Deducted (Employee)**

**70 Covered by Pension Plan (Employee)**

**74 Receiving Payments from Plan**

**Longest Employment**

**92 Employed/Self‑Employed**

**98 Weeks Worked per Year (Self‑Employed)**

**99 Salary (Self‑Employed)**

**101 Koegh Account (Self‑Employed)**

**102 Employment Status (Employee)**

**108 Weeks Worked per Year (Employee)**

**Table 9.1. (Continued)**

**Question # Content**

**Longest Employment (Continued)**

**109 Salary (Employee)**

**111 Covered by Pension Plan (Employee)**

**115 Receiving Payment from Plan (Employee)**

**Health**

**144 Health condition limiting work for pay**

**145 Health condition limiting work at home**

**Income**

**165 (a‑f) Receiving Social Security, etc., benefits**

**(Not Currently Married)**

**171 (a‑m) Receiving other income**

**(Not Currently Married)**

**172 (b‑e) Amount received last month2**

**(Not Currently Married)**

**173 (b‑e) Amount received two months ago2**

**(Not Currently Married)**

**174 (b‑e) Amount received three months ago2**

**(Not Currently Married)**

**182 (a‑f) Receiving Social Security, etc., benefits**

**(Currently Married)**

**190 (a‑m) Receiving other income**

**(Currently Married)**

**191 (b‑e) Respondent or spouse benefit**

**(Currently Married)**

**192 (b‑e) Amount received last month2**

**(Currently Married)**

**193 (b‑e) Amount received two months ago2**

**(Currently Married)**

**194 (b‑e) Amount received three months ago2**

**(Currently Married)**

**Assets**

**201 Money in savings or other assets**

**204 Holding any bonds**

**207 Other stocks or shares in mutual funds**

**210 Keogh Account or IRA**

**212 Regular payments or withdrawals from account**

**213 How much received in last three months**

**214 Keogh Account or IRA‑‑spouse**

**216 Regular payments or withdrawals‑‑spouse**

**217 Amount spouse received in last three months**

**220 Own or buying current residence**

**Table 9.1. (Continued)**

**Question # Content**

**Assets (Continued)**

**246 Total monies received in reference month**

**Marital History**

**250 Spouse's full name**

**251 Spouse's date of birth**

**252 Spouse's Social Security number**

**Disability Program Information**

**276 Disability benefits and Medicare**

**285 Trial work periods**

**Spouse Work History**

**S9 Currently working**

**S10 Year last worked**

**Spouse Current Employment**

**S17 Employed/Self‑Employed**

**S22 Hours Worked per Week (Self‑Employed)**

**S27 Employment Status (Employee)**

**S32 Hours Worked per Week (Employee)**

**S33 Weeks Worked per Year (Employee)**

**S144 Health condition or handicap limits paid work**

**S145 Health condition or handicap limits housework**

**1If a critical item was incorrectly skipped or the response recorded was inadequate, the interviewer was directed to recontact the respondent to obtain the necessary information.**

**2Response was acceptable if amount was recorded for any one of the three months.**

**Table 9.2 List of Critical Items for the**

**New Beneficiary Followup**

**Question # Content**

**Household Composition**

**1 Marital Status**

**4 Anyone Missed**

**Family Contacts**

**8 # Parents Living**

**13 # Children Living**

**Employment**

**18 Work Since 1982**

**18a Why Not Working**

**19 Years With Work**

**23 Currently Employed**

**24 Why Working**

**26 Date Started Work**

**28-31 Occupation/Industry**

**32 Health Insurance Available**

**33 Elected Health Insurance**

**35 Hours Worked**

**36 Weeks Worked**

**39 Employee/Self-Employed**

**55b Date Stopped Work**

**56 Why Quit Working**

**61 Why Health Problem Important**

**Disability Module**

**CKPT-C Disability Beneficiary**

**69 Date DI Began**

**73 Work For Pay When DI Began**

**74 Date Started Job**

**75 Job Same as Before**

**76 Work For Pay After DI Began**

**77 Looked For Work After DI**

**82 What Did to Find Work**

**91 Date Started Job**

**92 Same Job as Before**

**95 Why Return to Work**

**97-100 Occupation/Industry**

**101 Hours Worked**

**102 Weeks Worked**

**104 Employee/Self-Employed**

**110 Same Employer**

**111 Same Job Tasks**

**112 More/Less Physical**

**116 Covered by Pension**

**Table 9.2 (continued)**

**Disability Module (continued)**

**117 Accommodations**

**125 Date Stopped**

**126 Why Quit**

**134 Start Other Job**

**135 Look for Another Job**

**142 Receive Rehab**

**143 Receive Services**

**148 Aware of Incentives**

**149 Which Incentives**

**151 Aware of Incentives**

**154 Education**

**157 Race**

**158 Ethnicity**

**Health and Functional Status**

**159 General Health**

**160 Compare Health**

**161 Conditions Present**

**163 Heart Attack**

**164 Heart Problems Now**

**167 Medicare Coverage**

**168 Medicaid Coverage**

**169 VA Coverage**

**170 Other Health Coverage**

**175 Long Term Care**

**187 Bed Days Last 12 Months**

**189 Bed Currently**

**190 Wheelchair Bound**

**191 Ability To Go Outside**

**199 Limits Housework**

**200 Limits Work For Pay**

**206 Functional Limits**

**207 Self-Care Limits**

**208 Special Equipment**

**213 Management Limits**

**215 Domestic Task Limits**

**Housing**

**221 Renting Residence**

**230 Number of moves**

**235 Why Moved**

**237 What Did With Money From Sale of Home**

**Marital Change and Spouse Sections**

**239 Date of Widowhood**

**255 Widowed Since 12/82**

**288 Spouse Work Since 12/82**

**Table 9.2 (continued)**

**Marital Change and Spouse Sections (continued)**

**303 Spouse Resident in LTC Facility**

**327, 332a, 334 Spouse Need Help**

**339, 345 Income Sources**

**346-348a-e Amounts of Income**

**349, 357 Income Sources**

**359-361a-e Amounts of Income**

**Pension Income**

**CKPT-S,T Sources of Pension Income**

**375, 376 Number of Pensions**

**II before 377 Sources of Pension Income**

**380 Date Pension Started**

**383 Pension Increases**

**384 Reasons Pension Increased**

**387 Pension Decreases**

**388 Reasons Pension Decreased**

**389 Level Compared to First Receipt**

**II before 395 Who Received Terminated Pensions**

**395 Type of Terminated Pension**

**398 Year Pension Began/Stopped**

**Assets, Debts, Changes**

**408, 411 Hold IRA/Keogh**

**414 Money in Accounts**

**420 U.S. Government Savings Bonds**

**422 Other Bonds or Bills**

**425 Own Stocks**

**429 Own or Buy Residence**

**460 Ever Applied For SSI**

**461 Reasons Have Not Applied For SSI**

**483 Are Expenses Greater Than Income**

**485 Change in Savings or Reserves**

**486 Change in Wealth**

**505 Satisfaction with Standard of Living**

**Table 10.1.  Income and Income‑Related Items1 Imputed‑**

**in the New Beneficiary Survey**

**1. Earnings Items (Amounts)**

**(V2248 ‑ V2259)**

**a) Earnings from Current Job**

**b) Earnings from Last Job**

**c) Earnings from Longest Job**

**2. Income Types (Recipiency and Amounts)**

**(V2260 ‑ V2544)**

**a) Social Security**

**b) Supplemental Security Income**

**c) Railroad Retirement**

**d) Black Lung**

**e) Veteran's Benefits**

**f) Welfare**

**g) Earnings**

**h) State/Local Pension**

**i) Military Pension**

**j) Federal Pension**

**k) Private Pension**

**l) Annuities**

**m) Worker's Compensation**

**n) Unemployment Compensation**

**o) Alimony**

**p) Estate/Trust/Royalties**

**q) Household Transfer**

**r) Interhousehold Transfer**

**s) Food Stamps**

**3. Assets (Holdings, Amounts and Income)**

**(V2545 ‑ V2576, V2581 ‑ V2593)**

**a) Money Market**

**b) Certificates of Deposit**

**c) Savings**

**d) Credit Union**

**e) Checking**

**f) Bonds**

**g) Stocks**

**h) Respondent IRA**

**i) Spouse IRA**

**j) Own Home**

**k) Other Property**

**l) Business Equity**

**m) Professional Practice**

**n) Farm Equity**

**Table 10.1. (Continued)**

**4. Future Pensions and Miscellany (Recipiency and Amounts)**

**(V2928 ‑ V2933, V2577 ‑ V2580, V2594 ‑ V2599)**

**a) Expected Future Monthly Pension from Current Job**

**b) Expected Future Monthly Pension from Last Job**

**c) Expected Future Monthly Pension from Longest Job**

**d) Income from Boarders**

**e) Income from Repayment of Personal Loan**

**f) Other Income**

**1Both respondents' and spouses' amounts and recipiencies were computed for all items.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Table 10.2‑‑Income Receipt and Amounts from NBS and NBF‑‑** | | | | | |  |  |  |  |  |  |  |  |
|  | **NBS** | | | | | | |  |  |  |  |  |  |  |
|  | **Receipt** | | | | | **Amount** | |  |  |  |  |  |  |  |
|  | **Total** | **Yes** | **No** | **Missing** | **%Missing** | **Missing** | **% Missing** |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Social Security** | **18,599** | **16,983** | **1,574** | **42** | **0.2** | **507** | **3.0** |  |  |  |  |  |  |  |
| **SSI** | **18,599** | **675** | **17,860** | **64** | **0.3** | **17** | **2.5** |  |  |  |  |  |  |  |
| **Railroad Retirement** | **18,599** | **141** | **18,398** | **60** | **0.3** | **20** | **14.2** |  |  |  |  |  |  |  |
| **Black Lung** | **18,599** | **84** | **18,455** | **60** | **0.3** | **6** | **7.1** |  |  |  |  |  |  |  |
| **Veteran's Benefits** | **18,599** | **1,144** | **17,393** | **62** | **0.3** | **58** | **5.1** |  |  |  |  |  |  |  |
| **Welfare** | **18,599** | **147** | **18,387** | **65** | **0.3** | **6** | **4.1** |  |  |  |  |  |  |  |
| **Earnings** | **18,599** | **7,479** | **10,999** | **121** | **0.7** | **925** | **12.4** |  |  |  |  |  |  |  |
| **State/Local Pension** | **18,599** | **1,666** | **16,866** | **67** | **0.4** | **105** | **6.3** |  |  |  |  |  |  |  |
| **Military Pension** | **18,599** | **481** | **18,046** | **72** | **0.4** | **43** | **8.9** |  |  |  |  |  |  |  |
| **Federal Pension** | **18,599** | **781** | **17,748** | **70** | **0.4** | **80** | **10.2** |  |  |  |  |  |  |  |
| **Private pension** | **18,599** | **5,256** | **13,265** | **78** | **0.4** | **331** | **6.3** |  |  |  |  |  |  |  |
| **Annuities** | **18,601** | **718** | **17,784** | **99** | **0.5** | **76** | **10.6** |  |  |  |  |  |  |  |
| **Worker's Comp** | **18,599** | **168** | **18,350** | **81** | **0.4** | **6** | **3.6** |  |  |  |  |  |  |  |
| **Unemployment Comp** | **18,599** | **218** | **18,303** | **78** | **0.4** | **8** | **3.7** |  |  |  |  |  |  |  |
| **Alimony** | **18,599** | **98** | **18,420** | **81** | **0.4** | **2** | **2.0** |  |  |  |  |  |  |  |
| **Estates/Trusts** | **18,599** | **279** | **18,235** | **85** | **0.5** | **31** | **11.1** |  |  |  |  |  |  |  |
| **Household Transfers** | **18,599** | **332** | **18,186** | **81** | **0.4** | **20** | **6.0** |  |  |  |  |  |  |  |
| **Interhousehold Transfers** | **18,599** | **196** | **18,319** | **84** | **0.5** | **14** | **7.1** |  |  |  |  |  |  |  |
| **Food Stamps** | **18,599** | **839** | **17,682** | **78** | **0.4** | **11** | **1.3** |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Table 10.2‑‑Income Receipt and Amounts from NBS and NBF (continued)** | | | | | | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **NBF** | | | | | | |  |  |  |  |  |  |
|  | **Receipt** | | | | | **Amount** | |  |  |  |  |  |  |
|  | **Total** | **Yes** | **No** | **Missing** | **% Missing** | **Missing** | **% Missing** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Social Security** | **16,903** | **15,312** | **1,537** | **54** | **0.3** | **1,100** | **7.2** |  |  |  |  |  |  |
| **SSI** | **16,902** | **939** | **15,899** | **64** | **0.4** | **45** | **4.8** |  |  |  |  |  |  |
| **Railroad Retirement** | **16,902** | **119** | **16,725** | **58** | **0.3** | **17** | **14.3** |  |  |  |  |  |  |
| **Black Lung** | **16,902** | **78** | **16,765** | **59** | **0.3** | **14** | **17.9** |  |  |  |  |  |  |
| **Veteran's Benefits** | **16,902** | **959** | **15,882** | **61** | **0.4** | **58** | **6.0** |  |  |  |  |  |  |
| **Welfare** | **16,901** | **169** | **16,666** | **66** | **0.4** | **17** | **10.1** |  |  |  |  |  |  |
| **Earnings** | **16,902** | **4,179** | **12,654** | **69** | **0.4** | **395** | **9.5** |  |  |  |  |  |  |
| **State/Local Pension** | **16,903** | **1,735** | **15,095** | **73** | **0.4** | **92** | **5.3** |  |  |  |  |  |  |
| **Military Pension** | **16,902** | **384** | **16,448** | **70** | **0.4** | **39** | **10.2** |  |  |  |  |  |  |
| **Federal Pension** | **16,902** | **721** | **16,108** | **73** | **0.4** | **61** | **8.5** |  |  |  |  |  |  |
| **Private pension** | **16,902** | **5,133** | **11,699** | **70** | **0.4** | **320** | **6.2** |  |  |  |  |  |  |
| **Annuities** | **16,902** | **851** | **15,959** | **92** | **0.5** | **80** | **9.4** |  |  |  |  |  |  |
| **Worker's Comp** | **16,902** | **155** | **16,670** | **77** | **0.5** | **11** | **7.1** |  |  |  |  |  |  |
| **Unemployment Comp** | **16,902** | **157** | **16,672** | **73** | **0.4** | **7** | **4.5** |  |  |  |  |  |  |
| **Alimony** | **16,902** | **95** | **16,736** | **71** | **0.4** | **2** | **2.1** |  |  |  |  |  |  |
| **Estates/Trusts** | **16,902** | **242** | **16,585** | **75** | **0.4** | **45** | **18.6** |  |  |  |  |  |  |
| **Household Transfers** | **16,902** | **242** | **16,584** | **76** | **0.4** | **20** | **8.3** |  |  |  |  |  |  |
| **Interhousehold Transfers** | **16,902** | **272** | **16,551** | **79** | **0.5** | **23** | **8.5** |  |  |  |  |  |  |
| **Food Stamps** | **16,903** | **705** | **16,126** | **72** | **0.4** | **14** | **2.0** |  |  |  |  |  |  |

**Table 10.3.  Methodology Employed to Impute Missing**

**Income Amounts in the New Beneficiary**

**Survey by Income Type**

**Income Type Imputation Method**

**Social Security Benefit Formula**

**SSI Cell Mean**

**Railroad Retirement Cell Mean**

**Black Lung Cell Mean**

**Veteran's Benefits Stochastic Regression**

**Welfare Cell Mean**

**Earnings Stochastic Regression**

**State/Local Pension Stochastic Regression**

**Military Pension Stochastic Regression**

**Federal Pension Stochastic Regression**

**Private Pension Stochastic Regression**

**Annuities Stochastic Mean**

**Worker's Compensation Cell Mean**

**Unemployment Compensation Cell Mean**

**Alimony Cell Mean**

**Estate/Trust/Royalties Smoothed Mean/Global Mean**

**Household Transfer Cell Mean**

**Interhousehold Transfer Cell Mean**

**Food Stamps Benefit Formula**

**Table 10.4.  Summary of Responses and Imputations**

**for Income Amounts:  Cases with**

**Reported or Imputed Flags**

**Total Households**

**with Imputed**

**Households Households Income as a**

**Households with One with Percentage of**

**with Fully or More Entirely All Households**

**Reported Imputed Imputed with that**

**Income Type Amounts Amounts Amounts Income Type**

**Social Security 16,514 507 344 3.0**

**SSI 600 17 13 2.5**

**Railroad**

**Retirement 121 20 17 14.2**

**Black Lung 79 6 6 7.1**

**Veteran's**

**Benefits 1,089 58 53 5.1**

**Welfare 141 6 6 4.1**

**Earnings 6,618 925 ‑‑1 12.3**

**State/Local**

**Pension 1,573 105 102 6.3**

**Military**

**Pension 441 43 42 8.9**

**Federal Pension 706 80 78 10.2**

**Private Pension 4,944 331 ‑‑1 6.3**

**Annuities 650 76 75 10.5**

**Worker's**

**Compensation 162 6 6 3.6**

**Unemployment**

**Compensation 170 8 7 4.5**

**Alimony 96 2 2 2.0**

**Estate/Trust/**

**Royalties 252 31 30 11.0**

**Table 10.4. (Continued)**

**Total Households**

**with Imputed**

**Households Households Income as a**

**Households with One with Percentages of**

**with Fully or More Entirely All Households**

**Reported Imputed Imputed with that**

**Income Type Amounts Amounts Amounts Income Type**

**Household**

**Transfer 313 20 17 6.0**

**Interhousehold**

**Transfer 182 14 12 7.1**

**Food Stamps 828 11 8 1.3**

**1Information not available.  For income types with substantial imputa­tions the record dumps from which these columns were constructed generally did not contain sufficient data to permit derivation of these statistics.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Table 10.5‑‑Asset Holdings from NBS and NBF‑‑** | | | | |
|  | **NBS** | | | | |
|  | **Total** | **Yes** | **No** | **Missing** | **% Missing** |
| **Money market** | **18,599** | **3,965** | **13,845** | **789** | **4.2** |
| **CD** | **18,599** | **5,100** | **12,655** | **844** | **4.5** |
| **Savings accounts** | **18,599** | **10,320** | **7,456** | **823** | **4.4** |
| **Credit union** | **18,599** | **2,398** | **15,415** | **786** | **4.2** |
| **Checking accounts** | **18,599** | **13,584** | **4,248** | **767** | **4.1** |
| **Bonds** | **18,599** | **2,591** | **15,682** | **326** | **1.8** |
| **Stocks** | **18,599** | **2,804** | **15,438** | **357** | **1.9** |
| **IRA (Respondent)** | **18,599** | **1,982** | **16,480** | **137** | **0.7** |
| **IRA (Spouse)** | **12,320** | **1,158** | **11,026** | **136** | **1.1** |
| **Own home** | **18,491** | **13,589** | **4,840** | **62** | **0.3** |
| **Other property:** |  |  |  |  |  |
| **Rental housing** | **18,599** | **982** | **17,530** | **87** | **0.5** |
| **Vacation** | **18,599** | **521** | **17,979** | **99** | **0.5** |
| **Commercial** | **18,599** | **295** | **18,204** | **100** | **0.5** |
| **Land** | **18,599** | **844** | **17,661** | **94** | **0.5** |
| **Business equity** | **18,599** | **1,186** | **17,333** | **80** | **0.4** |
| **Professional practice** | **18,599** | **265** | **18,244** | **90** | **0.5** |
| **Farm equity** | **18,599** | **861** | **17,652** | **86** | **0.5** |
| **Roomers and boarders** | **18,599** | **244** | **18,309** | **46** | **0.2** |
| **Loan repayment** | **18,599** | **792** | **17,694** | **113** | **0.6** |
| **Life insurance (resp)** | **18,599** | **12,761** | **5,690** | **148** | **0.8** |
| **Life insurance (sp)** | **12,318** | **8,428** | **3,672** | **218** | **1.8** |
| **Vehicles** | **18,599** | **15,439** | **3,097** | **63** | **0.3** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Table 10.5--Asset Holdings from NBS and NBF (continued)** | | | | |
|  |  |  |  |  |  |
|  | **NBF** | | | | |
|  | **Total** | **Yes** | **No** | **Missing** | **%Missing** |
| **Money market** | **16,902** | **3,643** | **12,872** | **387** | **2.3** |
| **CD** | **16,902** | **5,331** | **11,168** | **403** | **2.4** |
| **Savings accounts** | **16,902** | **7,172** | **9,335** | **395** | **2.3** |
| **Checking accounts** |  |  |  |  |  |
| **With interest** | **16,902** | **7,563** | **9,054** | **285** | **1.7** |
| **No interest** | **16,902** | **6,709** | **9,883** | **310** | **1.8** |
| **Bonds** |  |  |  |  |  |
| **U.S. Government** | **16,902** | **1,828** | **14,892** | **182** | **1.1** |
| **Other** | **16,902** | **912** | **15,793** | **197** | **1.2** |
| **Stocks** | **16,892** | **2,325** | **14,359** | **208** | **1.2** |
| **Mutual funds** | **16,902** | **1,945** | **14,728** | **229** | **1.4** |
| **IRA (Respondent)** | **16,902** | **2,201** | **14,563** | **138** | **0.8** |
| **IRA (Spouse)** | **8,594** | **1,438** | **7,031** | **125** | **1.5** |
| **Own home** | **16,902** | **11,689** | **5,150** | **63** | **0.4** |
| **Other property:** |  |  |  |  |  |
| **Rental housing** | **16,902** | **835** | **15,976** | **91** | **0.5** |
| **Vacation** | **16,902** | **497** | **16,314** | **91** | **0.5** |
| **Commercial** | **16,902** | **169** | **16,640** | **93** | **0.6** |
| **Land** | **16,902** | **547** | **16,260** | **95** | **0.6** |
| **Business equity** | **16,902** | **632** | **16,172** | **98** | **0.6** |
| **Professional** | **16,902** | **99** | **16,705** | **98** | **0.6** |
| **Farm equity** | **16,902** | **585** | **16,220** | **97** | **0.6** |
| **Roomers and boarders** | **16,902** | **206** | **16,622** | **74** | **0.4** |
| **Loan repayment** | **16,902** | **797** | **15,987** | **118** | **0.7** |
| **Life insurance** | **16,902** | **10,387** | **6,366** | **149** | **0.9** |
| **Life insurance (Sp)** | **8,594** | **5,243** | **3,135** | **216** | **2.5** |
| **Vehicles** | **16,902** | **13,295** | **3,536** | **71** | **0.4** |

**Table 10.6. Disposition of Imputed Asset Holdings**

**in the New Beneficiary Survey**

**Imputed**

**Asset Type Holdings Flag**

**Yes No**

**Money market 248 541**

**CD 317 527**

**Savings 575 248**

**Credit union 150 636**

**Checking 611 156**

**Bonds 76 250**

**Stocks 101 256**

**IRA (Respondent) 25 112**

**IRA (Spouse) 19 117**

**Own home 52 10**

**Other property**

**Rental housing 5 82**

**Vacation 4 95**

**Commercial 3 97**

**Land 4 90**

**Business equity 8 72**

**Professional practice 2 88**

**Farm equity 6 80**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Table 10.7‑‑Asset Amounts from NBS and NBF‑‑** | | | | |
|  |  |  |  |  |  |
|  | **NBS** | | | | |
|  | **Holders** | **Amount Missing** | **Holding Missing** | **Difference** | **%Missing** |
| **Money market** | **3,965** | **1,842** | **789** | **1,053** | **26.6** |
| **CD** | **5,100** | **2,146** | **844** | **1,302** | **25.5** |
| **Savings accounts** | **10,320** | **3,005** | **823** | **2,182** | **21.1** |
| **Credit union** | **2,398** | **1,231** | **786** | **445** | **18.6** |
| **Checking accounts** | **13,584** | **2,983** | **767** | **2,216** | **16.3** |
| **Bonds** | **2,591** | **1,160** | **326** | **834** | **32.2** |
| **Stocks** | **2,804** | **1,372** | **357** | **1,015** | **36.2** |
| **IRA (resp)** | **1,982** | **434** | **137** | **297** | **15.0** |
| **IRA (spouse)** | **1,158** | **364** | **136** | **228** | **19.7** |
| **Own home \*** | **13,589** | **1,584** | **62** | **1,522** | **11.2** |
| **Other property** | **2,061** | **430** | **114** | **316** | **15.3** |
| **Business equity** | **1,186** | **450** | **80** | **370** | **31.2** |
| **Professional practice** | **265** | **186** | **90** | **96** | **36.2** |
| **Farm equity** | **861** | **329** | **86** | **243** | **28.2** |
|  |  |  |  |  |  |
| **\* Amount is selling price** | |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Table 10.7--Asset Amounts from NBS and NBF (continued)** | | |
|  |  |  |  |
|  | **NBF** | | |
|  | **Holders** | **Amount**  **Missing** | **% Missing** |
|  |  |  |  |
| **Money market** | **3,643** | **1,007** | **27.6** |
| **CD** | **5,331** | **1,417** | **26.6** |
| **Savings accounts** | **7,172** | **1,517** | **21.2** |
| **Checking accounts** |  |  |  |
| **With interest** | **7,563** | **1,343** | **17.8** |
| **No interest** | **6,709** | **798** | **11.9** |
| **Bonds** |  |  |  |
| **U.S. Government** | **1,828** | **448** | **24.5** |
| **Other** | **912** | **299** | **32.8** |
| **Stocks** | **2,325** | **964** | **41.5** |
| **Mutual funds** | **1,945** | **659** | **33.9** |
| **IRA (resp)** | **2,201** | **376** | **17.1** |
| **IRA (spouse)** | **1,438** | **285** | **19.8** |
| **Own home \*** | **11,689** | **946** | **8.1** |
| **Other property** | **1,659** | **220** | **13.3** |
| **Business equity** | **632** | **229** | **36.2** |
| **Professional practice** | **99** | **40** | **40.4** |
| **Farm equity** | **585** | **163** | **27.9** |
|  |  |  |  |
| **\* Amount is selling price** |  |  |  |

**Table 10.8. Number of Cases and Percentage of Responses Imputed for**

**Amounts of Fourteen Asset Types in the**

**New Beneficiary Survey**

**No. Cases Imputed % Responses Imputed**

**Asset Type**

**Positive Inap. Negative1 Appl.2 Inap.**

**Money market 1,301 541 30.9 3.8**

**CD 1,619 527 29.9 4.0**

**Savings 2,757 248 25.3 3.2**

**Credit union 595 636 23.4 4.0**

**Checking 2,827 156 20.3 3.5**

**Bonds 910 250 34.1 1.6**

**Stocks 1,116 256 38.5 1.6**

**IRA (Respondent) 322 112 16.0 0.7**

**IRA (Spouse)3 247 117 21.0 1.0**

**Own home4 1,574 10 11.55 0.2**

**Other property 351 70 9 17.3 0.4**

**Business equity 349 72 29 33.8 0.4**

**Professional**

**practice 96 88 2 45.8 0.5**

**Farm equity 239 80 10 28.9 0.5**

**1These are cases that reported a loss flag but not an amount.**

**2This includes positive and negative imputed values (Columns l and 3).**

**3Counts exclude the 6,279 single respondents.**

**4Columns 4 and 5 exclude 108 households with a combined home and business. The equity of the home is included in the equity of the business; some of the joint amounts are imputed.**

**5Market value of the home.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Table 10.9‑‑Asset Income from NBS and NBF‑‑** | | | | |
|  |  |  |  |  |  |
|  | **NBS** | | | | |
|  | **Holders** | **Income**  **Missing** | **Holding**  **Missing** | **Difference** | **% Missing** |
|  |  |  |  |  |  |
| **Money market** | **3965** | **2283** | **789** | **1494** | **37.7** |
| **CD** | **5100** | **2815** | **844** | **1971** | **38.6** |
| **Savings accounts** | **10320** | **4688** | **823** | **3865** | **37.5** |
| **Credit union** | **2398** | **1691** | **786** | **905** | **37.7** |
| **Checking accounts** | **13584** | **3693** | **767** | **2926** | **21.5** |
| **Bonds** | **2591** | **1997** | **326** | **1671** | **64.5** |
| **Stocks** | **2804** | **1243** | **357** | **886** | **31.6** |
| **IRA (resp)** | **1982** | **268** | **137** | **131** | **6.6** |
| **IRA (spouse)** | **1158** | **234** | **136** | **98** | **8.5** |
| **Own home \*** | **13589** | **458** | **62** | **396** | **2.9** |
| **Other property** | **2061** | **259** | **114** | **145** | **7.0** |
| **Business equity** | **1186** | **450** | **80** | **370** | **31.2** |
| **Professional practice** | **265** | **186** | **90** | **96** | **36.2** |
| **Farm equity** | **861** | **329** | **86** | **243** | **28.2** |
| **Roomers and boarders** | **244** | **61** | **46** | **15** | **6.1** |
| **Loan repayment** | **792** | **191** | **113** | **78** | **9.8** |
| **\* Income is total debt** | |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Table 10.9-- Asset Income from NBS and NBF (continued)** | | |
|  |  |  |  |
|  | **NBF** | | |
|  | **Holders** | **Income**  **Missing** | **% Missing** |
|  |  |  |  |
| **Money market** | **3643** | **1434** | **39.4** |
| **CD** | **5331** | **2246** | **42.1** |
| **Savings accounts** | **7172** | **3008** | **41.9** |
| **Checking accounts** |  |  |  |
| **With interest** | **7563** | **2282** | **30.2** |
| **Bonds** |  |  |  |
| **Non‑U.S. Govt** | **912** | **368** | **40.4** |
| **Stocks** | **2325** | **969** | **41.7** |
| **Mutual funds** | **1945** | **798** | **41.0** |
| **IRA (resp)** | **2201** | **338** | **15.4** |
| **IRA (spouse)** | **1438** | **243** | **16.9** |
| **Own home \*** | **11689** | **213** | **1.8** |
| **Other property** | **752** | **166** | **22.1** |
| **Business equity** | **632** | **229** | **36.2** |
| **Professional practice** | **99** | **40** | **40.4** |
| **Farm equity** | **585** | **163** | **27.9** |
| **Roomers and boarders** | **206** | **13** | **6.3** |
| **Loan repayment** | **797** | **71** | **8.9** |
| **\* Income is total debt** |  |  |  |

**Table 10.10. Number and Percentage of Imputed Income Flows Response**

**Category for Eleven Asset Types in the**

**New Beneficiary Survey**

**Number of Cases Imputed % Responses Imputed**

**Asset Type**

**Positive Zero Neg.1 Inap. Positive Zero Neg. Inap.**

**Money market 1,734 8 541 41.7 15.4 3.8**

**CD 2,269 19 527 42.9 15.4 4.0**

**Savings 4,228 212 248 41.4 31.4 3.2**

**Credit union 95 100 636 42.0 36.4 4.0**

**Checking 978 2,559 156 27.6 24.0 3.5**

**Bonds 1,273 474 250 63.9 70.1 1.6**

**Stocks 863 125 255 34.8 29.3 1.6**

**IRA (Respondent) 833 734 112 31.7 4.25 0.7**

**IRA (Spouse)2 253 924 117 32.1 8.45 1.0**

**Own home6 167 281 10 3.47 3.2 0.2**

**Other property 138 41 10 70 15.3 3.65 15.9 0.4**

**1These are cases that reported a loss flag but not an amount.**

**2Counts exclude the 6,279 single respondents.**

**3Includes cases responding "yes" to the income flag but not giving an amount.**

**4Cases imputed "no" on the income flag.**

**5Includes cases imputed or responding "no" to the payment flag.**

**6Proportions exclude 108 households with a combined home and business. The equity of the home is included in the equity of the business; some of the joint amounts were imputed.**

**7Total debt on home.**

**Table 10.11. Response Disposition to Expected Future Pensions from**

**Current, Last and Longest Jobs**

**in the New Beneficiary Survey**

**Expected Future Pension Recipiency**

**Job and Person Expected or Expectation**

**Don't Know1 Inappropriate2 Missing3**

**Respondent**

**Current 231 18,356 12**

**Last 563 17,996 40**

**Longest 75 18,484 40**

**Spouse**

**Current 884 17,524 191**

**Last 210 18,183 206**

**Longest 77 18,317 205**

**1These are the numbers of cases to whom expected future monthly pension payments were imputed.**

**2Persons already receiving a pension from that job; persons not expecting a pension; or persons not having a job in that field on the questionnaire.**

**3Persons refusing or missing a response to the expected future pension equation. These are largely persons who refused the entire set of questions for that job.**

**Table 10.12. Response Disposition and Distribution of Imputations**

**for Three Income Recipiency Flags**

**in the New Beneficiary Survey**

**Response Disposition Imputations**

**Income Source Percent**

**Yes No Missing Missing Yes No**

**Income from boarder 244 18,309 46 0.2 3 43**

**Income from loan 792 17,694 113 0.6 12 101**

**Other income 1,071 17,348 180 1.0 8 172**

**Table 10.13. Response Disposition and Distribution of Imputations**

**for Three Income Amounts**

**in the New Beneficiary Survey**

**Responses to Income1 Amounts Imputations**

**Income Source Posi- Miss- Percent Posi-**

**tive Zero Inap. ing2 Missing tive Inap.**

**Income from boarder 212 17 18,309 61 0.3 18 43**

**Income from loan 714 0 17,694 191 1.0 90 101**

**Other income 771 205 17,348 275 1.5 103 172**

**1The figures for income from boarder and other income refer to the third month prior to the interview.**

**2The missing column includes cases for which income recipiency was also missing.**

1. These sample numbers are slightly lower than numbers previously reported in some publications. During the course of analysis, several hundred respondents were found to have begun this period of receiving Aged or Disabled Social Security benefits prior to 1980-81. These respondents are excluded here and in later stages of the NBDS. [↑](#footnote-ref-1)
2. For further information on the NBS design, see Linda Drazga Maxfield, "The 1982 New Beneficiary Survey: An Introduction," Social Security Bulletin, November 1983, pages 3-11. [↑](#footnote-ref-2)
3. Martynas A. Ycas, "The New Beneficiary Data System: The First Phase," Social Security Bulletin, Summer 1992, pages 20-35. [↑](#footnote-ref-3)
4. See the Appendix in Linda Maxfield, op. cit.  Also, for further information about eligibility criteria and conditions for benefit entitlement and receipt, see the Social Security Administration, Social Security Handbook/1982, Seventh Edition,Washington, DC:  Government Printing Office, 1982. [↑](#footnote-ref-4)
5. Dual entitlement occurs when an individual is entitled to and receives two types of Social Security benefits concurrently. Retired-worker and disabled-worker benefits are primary benefits, while benefits as a spouse or survivor are secondary. If the secondary benefit amount is higher than the primary benefit amount, the beneficiary is dually entitled and receives the secondary amount. In this case, the secondary benefit supplements the primary benefit to equal the larger secondary amount. The most common case exists when a retired-worker or a disabled-worker beneficiary also qualifies for a larger benefit as a spouse or a survivor. [↑](#footnote-ref-5)
6. Nondisabled persons covered by Medicare must be aged 65 or older. The Medicare‑only nonbeneficiaries in the NBS were aged 65 to 71 in July 1982, implying that they were aged 63 to 70 during the window of June 1980 through May 1981. Individuals under age 65 during the window would not then have been entitled to Medicare, but would have achieved entitlement on their 65th birthday. [↑](#footnote-ref-6)
7. As previously noted in the Introduction, the NBF excludes a small number who were found to have received aged benefits prior to 1980-81. The total number interviewed in the NBS should have been 18,136. The figures reported in Table 2.1 were derived for the NBS User's Manual and have not been updated for this presentation. [↑](#footnote-ref-7)
8. At the time of sample frame construction, only preliminary SMSA definitions were available from the Census Bureau. Some of these have changed subsequently with the consequence that some of the "SMSA" psu's included counties which are now in fact metropolitan.  Analyses incorporating metropolitan/nonmetropolitan residential location should rely on the current OMB definitions of SMSAs, but this was not possible for the public use tape. [↑](#footnote-ref-8)
9. Some sampling errors in the NBDS may be based on variables which have been imputed for item nonresponse.  If the assumptions inherent in the imputation scheme are correct, there should be little impact on the values of the sampling errors.  A full discussion of these issues is found in Santos, R.L.  Effects of Imputation on Complex Statistics, Survey Research Center, University of Michigan, 1981. [↑](#footnote-ref-9)
10. Kish, L. and Frankel, M.R.  Balanced repeated replications for standard errors, Journal of the American Statistical Association, 1970, 65, 1071‑94.

    Plackett, R.L. and Burman, P.J.  The design of optimum multifactorial experiments, Biometrika, 1946, 33, 305‑25. [↑](#footnote-ref-10)
11. Ibid. [↑](#footnote-ref-11)
12. Op.cit. [↑](#footnote-ref-12)
13. Kalton, G.  Practical methods for estimating survey sampling errors, Bulletin of the International Statistical Institute, 1977, 47(3), 495‑514. [↑](#footnote-ref-13)
14. Kalton, G.  Compensating for Missing Survey Data.  Survey Research Center, University of Michigan, Ann Arbor, 1981.

    Santos, R.  Effects of Imputation on Complex Statistics.  Survey Research Center, University of Michigan, Ann Arbor, 1981. [↑](#footnote-ref-14)
15. Czajka.  Imputation Methodology for the New Beneficiaries Survey, Mathematica Policy Research, Inc., Washington, DC, 1984. [↑](#footnote-ref-15)
16. In two of 16 subgroups, a different method of generating the stochastic error term was used.  For details, see the methodological report. [↑](#footnote-ref-16)
17. See Table 2.A.9 of the 1993 Annual Statistical Supplement to the Social Security Bulletin. [↑](#footnote-ref-17)
18. **Not counting PRIORBENS.** [↑](#footnote-ref-18)
19. **Preliminary data. The number counted as deceased is expected to increase slightly as deaths during the final months of the survey are recorded in the MBR.** [↑](#footnote-ref-19)