Survey of Income and Program Participation (SIPP) 1990 Panel
Wave 8 Topical Module Microdata Research Flle

TECHNICAL DOCUMENTATION
SIPP-90-8RES
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# SURVEY OF INCOME AND PROGRAM PARTICIPATION (SIPP) 1990 PANEL <br> WAVE 8 TOPICAL MODULE MICRODATA RESEARCH FILE 

## Technical Documentation

Washington, D.C.

## U.S. DEPARTMENT OF COMMERCE

Ronald H. Brown, Secretary

Economic and Statistics Administration
Paul A. London, Under Secretary for
Economic Affairs
Bureau Of The Census
Harry A. Scarr, Acting Director

# bureau of the census 

Dr. Harry A. Scarr; Acting Director<br>DATA USER SERVICES DIVISION

Marshall L. Turner, Jr., Chief<br>Marie G. Argana, Assistant Chief<br>for User Services

## ACKNOWLEDGMENTS

Staff members of Demographic Surveys Division, under the direction of Sherry L. Courtland, Chief, provided overall guidance on technical details of this technical documentation. Fuad Foty provided the unformatted data dictionary file. In Data User Services Division, Genny Burns, assisted by Virginia Collins, coordinated the production of this documentation.

The file should be cited as follows:
Survey of Income and Program Participation (SIPP) 1990 Panel, Wave 8 Topical Module Microdata Research File [machine-readable data file] / prepared by the Bureau of the Census. -Washington: The Bureau [producer and distributor], 1993.

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For additional information concerning the questionnaire content or subject matter, contact Enrique Lamas (763-8578) in Housing and Household Economics Statistics Division, Bureau of the Census, Washington, D.C. 20233.

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## TABLE OF CONTENTS

## SURVEY OF INCOME AND PROGRAM PARTICIPATION (SIPP) 1990 PANEL <br> WAVE 8 TOPICAL MODULE MICRODATA RESEARCH FILE

Abstract ..... $1-1$
File Information ..... $2-1$
Glossary of Selected Terms ..... 3-1
Index to Topical Module File ..... 4-1
Variable Listing to Toplcal Module File ..... 5-1
How to Use the Data Dictlonary ..... 6-1
SIPP Toplcal Module Data Dictionary ..... 7-1
Source and Accuracy Statement ..... 8-1
Appendices
A. Code Lists
A-1 Income Source Code List ..... A1-1
A-2 Income Sources Included in Monthly Cash Income ..... A2-1
A-3 Sources of Means-Tested Benefits Covered in SIPP ..... A3-1
A-4 1980 Census of Population Occupation Classification System ..... A4-1
A-5 1980 Census of Population Industry Classification System ..... A5-1
B. Facsimiles
B-1 Control Card ..... B1-1
B-2 Topical Module Questionnaire ..... B2-1
C. Working Papers ..... C-1
D. Machine-Readable Data Dictionary Layout ..... D-1
E. User Notes ..... E-1


#### Abstract

Survey of Income and Program Participation (SIPP) 1990 Panel Wave 8 Topical Module Microdata Research File [machine-readable data file] / conducted by the U.S. Bureau of the Census. Washington: The Bureau [producer and distributor], 1993.


Type of File:
Microdata; unit of observation is an Individual.

## Universe Description:

The universe is the resident population of the United States, excluding persons living in institutions and military barracks.

## Subject-Matter Description:

The file contalns data primarily from the topical module portlon of the questionnaire. However, for purposes of matching persons to the core file, which was released separately, the beginning of the file contains identifying information as well as some basic demographic and social characteristlcs that are also contained in the core file. The identifying information includes sample unit, household address, and entry address identification.
Demographic and social characteristcs include age, sex, race (White; Black; American Indian, Eskimo, and Aleut; Asian or Pacific Islander; and Other), ethnic origin ( 23 categories including 7 Spanish origin categories), marital status, and educatlon. Data in this topical module file include annual income and retirement accounts, taxes, and school enrollment and financing.

The sample consists of 4 rotatlon groups, each intervlewed in a different month from June to September 1992. For each group the reference period for reporting labor force activity and income is the four calendar months preceding the interview month.

SIPP is a longitudlnal survey where each sampled household and each descendent household is reinterviewed at 4-month intervals for 8 interviews or "waves." This file contains the results of the eighth interview. Unique codes are included on each record to allow linking together the same persons from the preceding and subsequent waves.

## Geographic Coverage:

United States. Codes are included for 41 individual States and the District of Columbia, although the sample was not designed to produce State estimates. Areas in the SIPP sample in nine other States are identified in groups for confidentiality reasons. The file identifies a subsample of metropolitan residents, along with codes for selected metropolitan statistical areas (MSA's) and consolidated metropolitan statistical areas (CMSA's).

## Technical Description:

File Structure: Each logical record for a sampled person includes information on the household and family of which the person was a part during each month of the reference period, as well as characteristics of the person and each source of income received during the period.

File Size: 56,423 logical records; 344 character logical record length.
File Sort Sequence of Sample Units: Sampling unit identification number by entry address ID and person number within sampling unit.

## Reference Materials:

Survey of Income and Program Participation (SIPP) 1990 Panel, Wave 8 Topical Module Microdata Research File Technical Documentation. The documentation includes this abstract, the data dictionary, an index to the data dictionary, relevant code lists, a questionnaire facsimile, and general information relative to SIPP. One copy of the technical documentation accompanies each file order but also may be purchased separately for $\$ 25$ from Data User Services Division, Customer Services, Bureau of the Census,Washington, D.C. 20233.

Interviewers' Manual (1985). Survey of Income and Program Participation. U.S. Department of Commerce, Bureau of the Census. The manual is available for $\$ 10$ from Data User Services Division, Customer Services, Bureau of the Census, Washington, D.C. 20233.

Survey of Income and Program Participation Users' Guide. The Users' Guide contains a general overview of the file as well as chapters on survey design and content, structure and use of cross-sectional files, linking waves and reliability of the data. A single copy accompanies each technical documentation or tape order. Additional copies are available for $\$ 15$ each from Customer Services, Data User Services Division, Bureau of the Census, Washington, D.C. 20233.

Related Printed Reports:
Related printed reports include working papers, compilations of papers presented at annual meetings of the American Statistical Association, articles appearing in the Journal of Economic and Social Measurement, and reports in the P-70 series of the Current Population Reports. See the Users' Guide that accompanies the documentation for ordering information.

## Related Machine-Readable Data Files:

SIPP files from all Waves of the 1984 through 1990 Panels as well as 1991 Waves 1 through 4 are available from Customer Services, Data User Services Division, Bureau of the Census, Washington, D.C. 20233. An order form is on the following page for your convenience.

File Availability:
Survey of Income and Program (SIPP) 1990 Panel, Wave 8 Topical Module Microdata Research File is available at either 6250 or 1600 bpi; ASCII or EBCDIC, labeled or unlabeled. The file is also available on tape cartridges (IBM 3480 compatible). A machine-readable dictionary is contained at the end of the file. When ordering, please use the order form on the following page.

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## FILE INFORMATION

## Matching Topical Module File with Core File

Since the core and topical module data are released as separate files it may be necessary to match the two files. The two files contain the following information for linking purposes.

| Variable | Brief Description |
| :--- | :--- |
| ID | Sample Unit ID (scrambled) |
| ADDID | Hosehold address ID |
| ITEM36B | Interview status code |
| INTVW | Person's interview status |
| PP-MIS* | Person's monthly interview status |
| ENTRY | Edited entry address ID |
| PNUM | Edited person number |
| FINALWGT | Weighting factor |
| RRP | Edited relationship to reference person |
| AGE | Edited and imputed age as of last birthday |
| SEX | Sex of person |
| PNSP | Person number of spouse |
| PNPT | Person number of parent |
| HIGRADE | Highest grade of year of school attended |
| GRD-COMPL | Highest grade completed |
| ETHNICTY | Ethnic origin |

In order to confirm that the appropriate number of matches occur when merging data from core and topical module files, fields PP-MIS(1) through PP-MIS(4) for the four reference months and PP-MIS(5) for the interview month have been added. PP-MIS defines the monthly person interview status with 1 signifying an interview and 2 signifying a noninterview. Matching topical module records to month four on the person-month file should result in a match of all topical module records where PP-MIS(4) is equal to one. Although any reference month can be used for matching, month four is used because it is the closest month to the interview month available on the person-month files.

## Geographic Coverage

State codes are shown except for nine States which are identified in three groups. A subsample of metropolitan residents is identified along with codes for selected metropolitan statistical areas (MSA's) and consolidated metropolitan statistical areas (CMSA's). The sample was not designed to produce State or MSA/CMSA level estimates. State codes are primarily useful in relating a respondent's recipiency of benefits to thresholds which may vary from State to State. MSA/CMSA codes may be used in relating respondent characteristics with contextual variables.

## Identification Number System

The SIPP identification scheme is designed to uniquely identify individuals in each wave, provide a means of linking the same individuals over time, and group individuals into households and families over time.

The various components of the identification scheme are listed below:

[^0]The sample unit identification number was created by scrambling together the PSU, segment, and serial numbers used for Census Bureau administrative purposes. This identifier is constructed the same way on each wave regardless of moves, to enable matching from wave to wave.

The two-digit address ID code identifies each household associated with the same sample unit identification number. The first digit of the address ID code indicates the wave in which that address was first assigned for interview. The second digit sequentially numbers multiple households that have the same serial number. The address ID code is 11 for all sample addresses that are the same as in Wave 1. As SIPP sample persons move to new addresses, new address ID codes are assigned. Any new address to which sample unit members moved during Wave 4 is numbered in the 40 's.

The person ID is a five-digit number consisting of the two-digit entry address ID and a three-digit person number. Person numbers 101, 102, etc., are assigned in Wave 1; 201, 202, etc., are assigned to persons added to the roster in Wave 2, and so forth. This five-digit number is not changed or updated, regardless of moves.

The sampling unit serial number and address ID code uniquely identifies each household in any given wave. The sampling unit serial number can link all households in subsequent waves back to the original Wave 1 household.

## Topcoding of Income Variables

To protect against the possibility that a user might recognize the identity of a SIPP respondent with very high income, Income from every saurce is "topcoded" so that no individual income amounts above $\$ 100,000$ are revealed. While the data dictionary indicates a topcode of $\$ 33,332$ for monthly income, this topcode will rarely be used. In most cases the monthly income is shown as an individual dollar amount of $\$ 8,333$, with $\$ 8,333$ actually representing " $\$ 8,333$ or more." (the $\$ 100,000$ annual income topcode is $\$ 8,333$ multiplied by 12 months). Individual monthly amounts above $\$ 8333$ may occasionally be shown if the respondent's income varied considerably from month to month, as long as the average does not exceed $\$ 8,333$. For example, if a respondents' income from a single job were concentrated in only one of the four reference months, a figure as high as $\$ 33,332$ could be shown. (Income from interest or property have lower topcodes).

Summary income figures on the person, family, and household records are simple sums of the components shown on the file after topcoding, and are not independently topcoded. Thus, a person with high income from several sources (jobs, businesses, property) could have aggregate monthly income well over the topcode for each source. Families and households with a number of high income members could theoretically have aggregate income shown well over $\$ 100,000$, though well below the $\$ 1.5$ million shown as the highest allowable value in the data dictionary.

The user is cautioned against trying to make much use of the occasional monthly figures above $\$ 8,333$, except in calculating aggregates or observing patterns across the 4-month period for a single individual, family, or household. Those units with higher monthly amounts shown are a biased sample of high income units, more likely to include units with income from multiple sources than other units with equally high aggregate income which comes from a single source.

## GLOSSARY OF SELECTED TERMS


#### Abstract

Absent 1 or more weeks. Absent 1 or more weeks means absent without pay from a job or business. Persons were absent without pay in a month if they were 'with a job' during the entire month, but were not at work at that job during at least 1 full week (Sunday through Saturday) during the month, and did not receive wages or a salary for any time during that week. Reasons for an unpaid absence include vacation, illness, layoff, bad weather, labor disputes, and waiting to start a new job.

Family household. A family household is a household maintained by a family; any unrelated persons (unrelated subfamily members and/or secondary individuals) who may be residing there are included. The number of family households is equal to the number of families. The count of family household members differs from the count of family members, however, in that the family household members include all persons living in the household, whereas family members include only the householder and his/her relatives.

Family. A family is a group of two or more persons (one of whom is the householder) related by birth, marriage, or adoption and residing together; all such persons (including related subfamily members) are considered members of one family.


Farm-nonfarm residence. The farm population refers to rural residents living on farms. Under this definition, a farm is any place in rural territory from which sales of crops, livestock, and other agricultural products amounted to $\$ 1,000$ or more during the previous 12 -month period.

Full-time and part-time. The data on full- and part-time workers pertain to the number of hours a person usually worked per week during the weeks worked in the 4-month reference period of the survey. If the hours worked per week varied considerably, the respondent was asked to report an approximate average of the actual hours worked each week.

Persons 16 years old and over who reported usually working 35 or more hours each week during the weeks they worked are classified as 'full-time' workers; persons who reported that they usually worked fewer than 35 hours are classified as 'part-time' workers. The same definitions are used in the CPS.

Household. A household consists of all persons who occupy a housing unit. A house, an apartment or other group of rooms, or a single room is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters; that is, when the occupants do not live and eat with any other persons in the structure and there is either (1) direct access from the outside or through a common hall or (2) a kitchen or cooking equipment for the exclusive use of the occupants.

A household includes the related family members and all the unrelated persons, if any, such as lodgers, foster children, wards, or employees who share the housing unit. A person living alone in a housing unit or a group of unrelated persons sharing a housing unit as partners is also counted as a household. The count of households excludes group quarters. Examples of group quarters include rooming and boarding houses, college dormitories, and convents and monasteries.

Householder. Survey procedures call for listing first the person (or one of the persons) in whose name the home is owed or rented. If the house is owned jointly by a married couple, either the husband or the wife may be listed first, thereby becoming the reference person, or householder, to whom the relationship of the other household members is recorded. One person in each household is designated as the 'householder.' The number of householders, therefore, is equal to the number of households.

Layoff. In general, the word 'layoff' means release from a job because of slack work, material shortages, inventory taking, plant remodeling, installation of machinery, or other similar reasons. For this survey, persons were also on 'layoff' who did not have job but who responded that they has spent at least 1 week on layoff from a job and that they were available to accept a job.

In addition, persons were on 'layoff' in a given month if they were 16 years old or over and (a) were 'with a job' but 'absent without pay' from that job for at least 1 full week during that month, and (b) they responded that their main reason for being absent from their job or business was 'layoff.' 'On layoff' also includes a small number of persons who responded that they were waiting to report to a new wage and salary job that was to begin within 30 days. In other words, persons waiting to begin a new job are classified together with persons waiting to return to a job from which they have been laid off.

Looking for work. Persons who 'looked for work' in a given month are those who were 16 years old or over and (a) were without a job during at least 1 week during the month, (b) tried to get work or establish a business or profession in that week, and (c) were available to accept a job. Examples of jobseeking activities are (1) registering at a public or private employment office, (2) meeting with prospective employers, (3) investigating possibilities for starting a professional practice or opening a business, (4) placing or answering advertisements, (5) writing letters of application, and (6) being on a professional register.

The CPS uses a similar concept of 'looking for work.' The term 'unemployed' as used in the CPS includes persons who were looking for work in the reference week and those who were 'on layoff' or 'waiting to begin a new job in 30 days."

Low-Income Home Energy Assistance Program. Benefits from the Federally funded LIHEAP authorized by Thte XXVI of the Omnibus Budget Reconciliation Act of 1981, or comparable assistance provided through State funded assistance programs, may be received in the form of direct payment to the household as reimbursement for heating or cooling expenses or paid directly to the fuel dealer or landlord.

Means-tested benefits. The term means-tested benefits refers to programs that require the income or assets (resources) of the individual or family be below specified guidelines in order to qualify for benefits. These programs provide cash and noncash assistance to the low-income population. The major sources of meanstested cash and noncash assistance are shown in Appendix B-2.

Medicaid. This term refers to the Federal-State program of medical assistance for low-income individuals and their families as provided for by Title XIX of the Social Security Act. The phrase 'Medicaid covered' refers to persons enrolled in the Medicaid program, regardless of whether they actually utilized any Medicaid covered health care services during the survey reference period.

Medicare. This term refers to the Federal Health Insurance Program for the Aged and Disabled as provided for by Titte XVIII of the Social Security Act. The phrase 'Medicare covered' refers to persons enrolled in the Medicare program, regardless of whether they actually utilized any Medicare covered health care services during the survey reference period.

Monthly income. The monthly income estimates for households are based on the sum of the monthly income received by each household member age 15 years old or over.

Cash income includes all income received from any of the sources listed in Appendix B-1. Rebates, refunds, loans, and capital gain or loss amounts from the sale of assets, and interhousehold transfers of cash such as allowances are not included. Accrued interest on Individual Retirement Accounts, KEOUGH retirement plans. and U.S. Savings bonds are also excluded. This definition differs somewhat from that used in the annual income reports based on the March CPS Income supplement questionnaire. These data, published in the Consumer Income Series, P-60, are based only on income received in a regular or periodic manner and, therefore, exclude lump-sum or one-time payments such as inheritances and insurance settlements. The March CPS income definition, however, does exclude the same income sources excluded by SIPP.

The income amounts represent amounts actually received during the month, before deductions for income and payroll taxes, union dues, Part B Medicare premiums, etc.

The SIPP income definition includes three types of earnings: wages and salary, nonfarm self-employment, and farm self-employment. The definition of nonfarm self-employment and farm self-employment is not based on the net difference between gross receipts or sales and operating expenses, depreciation, etc. The monthly amounts for these income types are based on the salary or other income received from the business by the owner of the business or farm during the 4-month reference period.

The Bureau of Labor Statistics publishes quarterly averages for an earnings concept called 'usual weekly earnings' for employed wage and salary workers. The concept differs from the SIPP earnings concept since it is based on usual, not actual earnings, excludes the self-employed, and excludes earnings from secondary jobs.

While the income amounts from most sources are recorded monthly for the 4-month reference period, property income amounts, interest, dividends, rental income, etc., were recorded as totals for the 4 -month period. These totals were distributed equally between months of the reference period for purposes of calculating monthly averages.

Nonfamily household. A nonfamily household is a household maintained by a person living alone or with nonrelatives only.

Persons of Spanish origin. Persons of Spanish origin were determined on the basis of a question that asked for self-identification of the person's origin or descent. Respondents were asked to select their origin (or the origin of some other household member) from a 'flash card' listing ethnic origins. Persons of Spanish origin, in particular, were those who indicated that their origin was Mexican, Puerto Rican, Cuban, Central or South American, or some other Spanish origin. It should be noted that persons of Spanish origin may be of any race.

Population coverage. The estimates are restricted to the civilian noninstitutional population of the 50 States and members of the Armed Forces living off post or with their families on post.

Race. The population is divided into groups on the basis of race: White; Black; American Indian, Eskimo, or Aleut; Asian or Pacific Islander; and 'other races.'.

Special Supplemental Food Program for women, Infants, and Children (WIC). Benefits are received in the form of vouchers that are redeemed at retail stores for specific supplemental nutritious foods. Eligible lowincome recipients are infants and children up to age five and pregnant, postpartum, and breastfeeding women.

Unemployment compensation. This term refers to cash benefits paid to unemployed workers through a State or local unemployment agency. These include all benefits paid under the Federal-State unemployment insurance program as established under the Social Security Act, as well as those benefits paid to State and local government employees, Federal civilian employees, and veterans.

With a Job. Persons are classified 'with a job' in a given month if they were 16 years old or over and, during the month, either (a) worked as paid employees or worked in their own business or profession or on their own farm or worked without pay in a family business or farm or (b) were temporarily absent from work either with or without pay. In general, the word 'job' implies an arrangement for regular work for pay where payment is in cash wages or salaries, at piece rates, in tips, by commission, or in kind (meals, living quarters, supplies received). 'Job' also includes self-employment at a business, professional practice, or farm. A business is defined as an activity which involves the use of machinery or equipment in which money has been invested or an activity requiring an office or 'place of business' or an activity which requires advertising; payment may be in the form of profits or fees.

The Current Population Survey (CPS), the official source of labor force statistics for the Nation, uses the same definition for a job or business. The term 'with a job,' however, should not be confused with the term 'employed' as used in the CPS. 'With a job' includes those who were temporarily absent from a job because of layoff and those waiting to begin a new. job In 30 days; in the CPS these persons are not considered 'employed.' See 'Worked each week' below.

With labor force activity. The term 'with labor force activity' includes all persons with a job (as defined above) and those looking for work or on layoff from a job for at least 1 week during a given month. Conversely, those persons 'with no labor force activity' had no job, were not on layoff from a job and made no effort to find a job during the month.

Work disability. Persons were classified as having a work disability if they were identified by the respondent as having a physical, mental, or other health condition that limits the kind or amount of work they can do.

Worked each week. Persons 'worked each week' in a month if, for the entire month, they were 'with a job' and not 'absent without pay' from the job. In other words, a person worked each week in any month when they were (a) on the job the entire month, or (b) they received wages or a salary for all weeks in the month, whether they were on the job or not. Persons also worked each week if they were self-employed and spent time during each week of the month at or on behalf of the business or farm they owned, as long as they received or expected to receive profit or fees for their work.

In the CPS, the concept at 'work' includes those persons who spent at least 1 hour during the reference week at their job or business. In the CPS, however, 'at work' does not include persons who were temporarily absent from their jobs during the entire reference week on paid vacation, sick leave, etc. In SIPP, 'worked each week' does include persons on paid absences.

## INDEX TO 1990 WAVE 8 TOPICAL MODULE RESEARCH FILE

ItemMnemonicPosition
Address Identification ADDID ..... 20
Address Identification - Edited Entry ENTRY ..... 30
Age as of Last Birthday - Edited and Imputed AGE ..... 48
Another Business - Check Item T9 TM8274 ..... 118
Assets, Other .TM9354 ..... 178
Assets, Other .TM9382 ..... 192
Assets, Types Unknown .TM9356 ..... 179
Assets, Types Unknown .TM9384 ..... 193
Business (Second) Owner , Person Number of Other .TM8064 ..... 125
Business ID Number - Check Item T3 .TM8010 ..... 77
Business ID Number of Business For Other Owner .TM8016 ..... 83
Business ID Number of Business for Other Owner. .TM8066 ..... 128
Business In Own Name, Percentage of Second TM8166 ..... 145
Business Information Already Obtained - Check Item T4 TM8012 ..... 79
Business Information Obtained - Check Item T4 .TM8062 ..... 124
Business Names on Control Card - Check Item T1 TM8000 ..... 69
Business Owned and Operated During Calendar Year 1990 TM8004 ..... 71
Business Owned by Household Members, \% of Second .TM8164 ..... 143
Business Owned Entirely by Household Members, First .TM8112 ..... 97
Business Owned Entirely by Household Members, Second ..... 142
.TM8162
Business Owned in Own Name, Percentage of. ..... 100
.TM8116
Business Owner Entirely by Household Members, Percentage of ..... 98
Businesses Owned and Operated During 1990, Number of ..... 72
Certificates of Deposit or Other Savings Certificates. ..... 172
Certificates of Deposit or Other Savings Certificates. ..... 186
Co-Owner of Business, Person Number of First ..... 108
Co-Owner of Business, Person Number of Second ..... 113
Co-Owner of Second Business, Person Number of First ..... 153
Co-Owner of Second Business, Person Number of Second ..... 158
College Work Study Program ..... 266
College Work Study, Amount Received From ..... 267
Cosi for Room and Board, Total ..... 248
Cost of Books and Supplies, Total ..... 243
Cost of Tuition and Fees, Total ..... 238
Education and Training Imputation Flags ..... 322
Educational Assistance From Other Source, Amount of. ..... 315
Educational Assistance Received ..... 253
Educational Assistance, Other Type of ..... 314
Educational Assistance, Total Amount of. ..... 340
Employer Educational Assistance ..... 297
Employer Educational Assistance, Amount Received From ..... 298
Employer Names Listed on Control Card ..... 194
Enrolled in Elementary or High School ..... 236
Enrolled in Public School ..... 237
Ethnic Origin ..... 63
Fellowship or Scholarship Assistance ..... 303
Fellowship or Scholarship, Amount Received From ..... 304
Form of Business - Type of Proprietorship ..... 130
Gl Bill Educational Assistance ..... 255
GI Bill, Amount Received From ..... 256
Grade Attended Was Completed, Highest GRD-CMPL ..... 62
Grade or Level in Which Enrolled TM9612 ..... 234
Grade or Year of School Attended, Highest HIGRADE ..... 60
Guaranteed Student Loan TM9652 ..... 286
Guaranteed Student Loan, Amount Received From TM9654 ..... 287
Household Members Part Business Owners - Check Item T8 TM8208 ..... 105
Household Members Part Owner-Second Person Number TM8160 ..... 139
Household Members Part Owners of Second Business TM8156 ..... 134
Household Members Part Owners-First Person Number. TM8158 ..... 136
ID Number of Second Business - Check Item T3 TM8060 ..... 122
Identifier, Sample Unit ..... ID ..... 6
Income From Second Business TM8254 ..... 148
Income Recelved by Other Household Owners of Business TM8210 ..... 106
Income Received From Business By Household Owners TM8260 ..... 151
Index From Core, Person PINX ..... 18
Individual Retirement (IRA) Contributions Applied to Tax Return TM9332 ..... 168
Individual Retirement (IRA) Withdrawals During 1990 TM9336 ..... 170
Individual Retirement Account (IRA) in Own Name. TM9330 ..... 166
Industry Code for First Business TMIND1 ..... 74
Industry Code for Second Business TMIND2 ..... 119
Interview Status Code ITEM36B ..... 22
Interview Status of Spouse TM9488 ..... 218
Interview Status, Person's INTVW ..... 24
Interviews Obtained Previously - Check Item T2 TM8002 ..... 70
Items With Data on This Record, Number of TMEBCNT ..... 197
Items With Data on This Record, Number of TMETCNT ..... 320
Items With Data on This Record, Number of TMPICNT ..... 229
JTPA Training Educational Assistance TM9656 ..... 292
JTPA Training Program, Amount Received From TM9658 ..... 293
KEOGH Account in Own Name TM9358 ..... 180
KEOGH Contributions Applied to 1990 Tax Return TM9360 ..... 182
KEOGH Withdrawals During 1990 TM9364 ..... 184
Live Away From Home While Attending School TM9622 ..... 247
Location of First Business ..... 87
Location of Second Business ..... 132
Loss From Business for First Co-Owner, Indication of ..... 111
Loss From Business for Second Co-Owner, Indication of ..... 116
Loss From Other Businesses ..... 164
Loss from Second Business for First Co-Owner. ..... 156
Loss from Second Business for Second Co-Owner ..... 161
Lost Money on Business ..... 103
Marital Status ..... 53
Money Market Funds ..... 173
Money Market Funds ..... 187
Municipal or Corporate Bonds ..... 175
Municipal or Corporate Bonds ..... 189
National Direct Student Loan ..... 281
National Direct Student Loan, Amount Received From. ..... 282
Owner of Business, Person Number of Other ..... 80
Ownership by Other Household Members - First Person Number ..... 91
Ownership by Other Household Members - Second Person Number ..... 94
Ownership of First Business by Other Household Members ..... 89
Part Owners of Second Business - Check Item T8 ..... 150
Pell Grant Educational Assistance ..... 271
Pell Grant, Amount Received From ..... 272
Person Number of Parent ..... 57
Person Number of Spouse ..... 54
Person Number, Edited PNUM ..... 32
Person's Month in Sample PP-MIS1:5 ..... 25
Race - Edited and Imputed RACE ..... 52
Relationship to Reference Person, Edited RRP ..... 47
Rotation Group ROTATION ..... 15
Salary Reduction or 401K Plan TM9386 ..... 195
School Enrollment Status TM9610 ..... 233
SEOG, Amount Received From TM9646 ..... 277
Sequence Number of Sample Units SUSEQNUM ..... 1
Sex - Edited and Imputed ..... SEX ..... 51
Sole Proprietorship - Check Item T7 TM8126 ..... 102
Sole Proprietorship for Business One - Check Item T7 TM8176 ..... 147
Sole Proprietorship Marked for First Business TM8104 ..... 8
Sole Proprietorship-Check Item T5 for Second Business TM8154 ..... 133
State Code - FIPS STATE ..... 16
Stocks or Mutual Fund Shares TM9352 ..... 177
Stocks or Mutual Fund Shares TM9380 ..... 191
Supplement Educational Opportunity Grant(SEOG) TM9644 ..... 276
Tax Bill, Amount of Property TM9498 ..... 227
Tax Exemptions for 1st Dependent - Relationship. TM9416 ..... 209
Tax Exemptions for 2nd Dependent - Relationship ..... 210
Tax Exemptions for Dependents Outside Home ..... 208
TM9414
Tax Filing Status .....  204
Tax Form Copy For Reference ..... 203
Tax Form Filed, Type of ..... 211
Tax Information Already Obtained - Check Item T26 ..... 201
Tax Paid Jointly With Person One, Property ..... 221
Tax Paid Jointly With Person Two, Property ..... 224
Tax Return Exemptions Claimed, Total Number of ..... 206
Tax Return Filed for 1990 ..... 202
Tax Schedule A - Itemized Deductions ..... 213
Tax Schedule D - Capital Gains and Losses ..... 215
Taxes Paid in 1990, Property ..... 219
Taxes Paid Jointly, Property ..... 220
Tenure - Check Item T35 ..... 217
Three or More Businesses - Check Item T10 ..... 163
Tuition Reduction Educational Assistance ..... 309
Tuition Reduction, Amount Received From ..... 310
United States Government Securities ..... 174
United States Government Securities ..... 188
United States Savings Bonds ..... 176
United States Savings Bonds ..... 190
Veteran's Educational Assistance Program ..... 260
Veteran's Programs, Amount Received From ..... 261
Wave Number Within Panel WAVE ..... 65
Weight, Second Stage Factor FINALWGT ..... 35

## VARIABLE LISTING TO 1990 WAVE 8 TOPICAL MODULE RESEARCH FILE

Mnemonic Item ..... Position
ADDID Address Identification ..... 20
AGE Age as of Last Birthday - Edited and Imputed ..... 48
ENTRY Address Identification - Edited Entry ..... 30
ETHNICTY Ethnic Origin ..... 63
FINALWGT Weight, Second Stage Factor ..... 35
GRD-CMPL Grade Attended Was Completed, Highest ..... 62
HIGRADE Grade or Year of School Attended, Highest ..... 60
ID. Identifier, Sample Unit .....  .6
INTVW. Interview Status, Person's ..... 24
ITEM36B Interview Status Code ..... 22
MS Marital Status ..... 53
PINX Index From Core, Person ..... 18
PNPT Person Number of Parent ..... 57
PNSP Person Number of Spouse ..... 54
PNUM Person Number, Edited ..... 32
PP-MIS1:5 Person's Month in Sample ..... 25
RACE Race - Edited and Imputed ..... 52
ROTATION Rotation Group ..... 15
RRP Relationship to Reference Person, Edited ..... 47
SEX Sex - Edited and Imputed ..... 51
STATE State Code - FIPS ..... 16
SUSEQNUM Sequence Number of Sample Units .....  1
TM-IFC1:18 Education and Training Imputation Flags ..... 322
TM8000 Business Names on Control Card - Check Item T1 ..... 69
TM8002 Interviews Obtained Previously - Check Item T2 ..... 70
TM8004 Business Owned and Operated During Calendar Year 1990 ..... 71
TM8006 Businesses Owned and Operated During 1990, Number of ..... 72
TM8010 Business ID Number - Check Item T3 ..... 77
TM8012 Business Information Already Obtained - Check Item T4 ..... 79
TM8014 Owner of Business, Person Number of Other. ..... 80
TM8016 Business ID Number of Business For Other Owner ..... 83
TM8020 Location of First Business ..... 87
TM8060 ID Number of Second Business - Check Item T3 ..... 122
TM8062 Business Information Obtained - Check Item T4 ..... 124
TM8064 Business (Second) Owner , Person Number of Other ..... 125
TM8066 Business ID Number of Business for Other Owner ..... 128
TM8068 Form of Business - Type of Proprietorship ..... 130
TM8070 Location of Second Business ..... 132
TM8104 Sole Proprietorship Marked for First Business ..... 88
TM8106 Ownership of First Business by Other Household Members ..... 89
TM8108 Ownership by Other Household Members - First Person Number ..... 91
TM8110 Ownership by Other Household Members - Second Person Number ..... 94
TM8112 Business Owned Entirely by Household Members, First ..... 97
TM8114 Business Owner Entirely by Household Members, Percentage of ..... 98
TM8116 Business Owned in Own Name, Percentage of ..... 100
TM8126 Sole Proprietorship - Check Item T7 ..... 102
TM8154 Sole Proprietorship-Check Item T5 for Second Business ..... 133
TM8156 Household Members Part Owners of Second Business ..... 134
TM8158 Household Members Part Owners-First Person Number ..... 136
TM8160 Household Members Part Owner-Second Person Number ..... 139
TM8162 Business Owned Entirely by Household Members, Second ..... 142
TM8164 Business Owned by Household Members, \% of Second ..... 143
TM8166 Business In Own Name, Percentage of Second ..... 145
TM8176 Sole Proprietorship for Business One - Check Item T7 ..... 147
TM8204 Lost Money on Business ..... 103
TM8208 Household Members Part Business Owners - Check Item T8 ..... 105
TM8210 Income Received by Other Household Owners of Business ..... 106
TM8212 Co-Owner of Business, Person Number of First ..... 108
TM8216 Loss From Business for First Co-Owner, Indication of. ..... 111
TM8218 Co-Owner of Business, Person Number of Second ..... 113
TM8222 Loss From Business for Second Co-Owner, Indication of ..... 116
TM8254 Income From Second Business. ..... 148
TM8258 .Part Owners of Second Business - Check Item T8 ..... 150
TM8260 Income Received From Business By Household Owners ..... 151
TM8262 Co-Owner of Second Business, Person Number of First ..... 153
TM8266 Loss from Second Business for First Co-Owner. ..... 156
TM8268 Co-Owner of Second Business, Person Number of Second ..... 158
TM8272 Loss from Second Business for Second Co-Owner. ..... 161
TM8274 Another Business - Check Item T9 ..... 118
TM8276 Three or More Businesses - Check Item T10 ..... 163
TM8280 Loss From Other Businesses. ..... 164
TM9330 ..........................Individual Retirement Account (IRA) In Own Name ..... 166
TM9332 ..........................Individual Retlrement (IRA) Contributlons Applled to Tax Return ..... 168
TM9336 .........................Individual Retirement (IRA) Withdrawals During 1990 ..... 170
TM9342 .........................Certificates of Deposit or Other Savings Certificates. ..... 172
TM9344 Money Market Funds ..... 173
TM9346 United States Government Securitles ..... 174
TM9348 Municlpal or Corporate Bonds. ..... 175
TM9350 United States Savings Bonds. ..... 176
TM9352 Stocks or Mutual Fund Shares ..... 177
TM9354 Assets, Other ..... 178
TM9356 Assets, Types Unknown ..... 179
TM9358 KEOGH Account in Own Name ..... 180
TM9360 KEOGH Contributions Applied to 1990 Tax Return ..... 182
TM9364 KEOGH Withdrawals During 1990 ..... 184
TM9370 Certificates of Deposit or Other Savings Certificates. ..... 186
TM9372 Money Market Funds. ..... 187
TM9374 United States Government Securities ..... 188
TM9376 Municipal or Corporate Bonds ..... 189
TM9378 United States Savings Bonds. ..... 190
TM9380 Stocks or Mutual Fund Shares ..... 191
TM9382 Assets, Other ..... 192
TM9384 Assets, Types Unknown ..... 193
TM9385 Employer Names Listed on Control Card ..... 194
TM9386 Salary Reduction or 401 K Plan ..... 195
TM9390 Tax Information Already Obtained - Check Item T26. ..... 201
TM9392 Tax Return Filed for 1990 ..... 202
TM9394..........................Tax Form Copy For Reference ..... 203
TM9396 Tax Filing Status ..... 204
TM9398 Tax Return Exemptions Claimed, Total Number of ..... 206
TM9414 Tax Exemptions for Dependents Outside Home ..... 208
TM9416 Tax Exemptions for 1st Dependent - Relationship. ..... 209
TM9418 Tax Exemptions for 2nd Dependent - Relatlonship ..... 210
TM9420 Tax Form Filed, Type of ..... 211
TM9422 Tax Schedule A - Itemized Deductions ..... 213
TM9424 Tax Schedule D - Capital Gains and Losses ..... 215
TM9486 Tenure - Check Item T35 ..... 217
TM9488 Interview Status of Spouse ..... 218
TM9490 Taxes Paid in 1990, Property ..... 219
TM9492 Taxes Paid Jointly, Property ..... 220
TM9494 Tax Pald Jointly With Person One, Property ..... 221
TM9496 Tax Paid Jointly With Person Two, Property ..... 224
TM9498 Tax Bill, Amount of Property ..... 227
TM9610 School Enrollment Status. ..... 233
TM9612 ..........................Grade or Level in Which Enrolled ..... 234
TM9614 ..........................Enrolled In Elementary or High School ..... 236
TM9616 Enrolled in Public School ..... 237
TM9618 Cost of Tuition and Fees, Total ..... 238
TM9620 Cost of Books and Supplies, Total ..... 243
TM9622 Live Away From Home While Attending School ..... 247
TM9624 Cost for Room and Board, Total ..... 248
TM9626 Educational Assistance Received ..... 253
TM9628 GI Bill Educational Assistance ..... 255
TM9630 GI Bill, Amount Received From ..... 256
TM9632 Veteran's Educational Assistance Program ..... 260
TM9634 Veteran's Programs, Amount Received From ..... 261
TM9636 College Work Study Program ..... 266
TM9638 College Work Study, Amount Received From ..... 267
TM9640 Pell Grant Educational Assistance. ..... 271
TM9642 Pell Grant, Amount Received From ..... 272
TM9644 Supplement Educatlonal Opportunity Grant(SEOG) ..... 276
TM9646 SEOG, Amount Received From ..... 277
TM9648 National Direct Student Loan. ..... 281
TM9650 National Direct Student Loan, Amount Received From. ..... 282
TM9652 Guaranteed Student Loan ..... 286
TM9654 Guaranteed Student Loan, Amount Received From ..... 287
TM9656 JTPA Training Educational Assistance ..... 292
TM9658 JTPA Training Program, Amount Received From ..... 293
TM9660 Employer Educational Assistance ..... 297
TM9662 Employer Educational Assistance, Amount Received From ..... 298
TM9664 Fellowship or Scholarship Assistance ..... 303
TM9666 Fellowship or Scholarship, Amount Received From ..... 304
TM9668 Tuition Reduction Educational Assistance ..... 309
TM9670 Tuition Reduction, Amount Received From ..... 310
TM9672 Educatlonal Assistance, Other Type of ..... 314
TM9674 Educational Assistance From Other Source, Amount of ..... 315
TMEBCNT. Items With Data on This Record, Number of. ..... 197
TMETCNT Items With Data on This Record, Number of. ..... 320
TMIND1 Industry Code for First Business. ..... 74
TMIND2 Industry Code for Second Business ..... 119
TMPICNT Items With Data on This Record, Number of ..... 229
TMTEDFIN Educatlonal Assistance, Total Amount of. ..... 340
WAVE Wave Number Within Panel ..... 65

## HOW TO USE THE DATA DICTIONARY

The Data Dictionary describes the contents and record layout of the public-use computer tape file. The first line of each data item description gives the data name, size of the data field, and the begin position of the field.

The next few lines contain descriptive text and any applicable notes. Categorical value codes and labeis are given where needed. Comment notes marked by an ( ${ }^{*}$ ) are provided throughout. Comments should be removed from the machine-readable version of the data dictionary before using it to help access the data file.

Data. Alphabetic, numeric, and the special character ( - ). No other special characters are used. It may be a mnemonic such as "STATE" or "SE1-OCC", or a sequential identifier such as "SC1176" or "WS-IMP01". Data item names are unique throughout the entire file.

Size. Numeric. The size of a data item is given in characters. Indication of implied decimal places is provided in notes.

Begin. Numeric. Contains the location in the data record of the first character position of the data item field.

The first line of each data item description begins with the character " $D$ " (left-justified, two characters). The " $D$ " flag indicates lines in the data dictionary containing the name, size, relative begin and begin position of each data item. This information (in machine-readable form) can be used to help access the data file. The line beginning. with the character " $U$ " describes the universe for that item. Lines containing categorical value codes and labels follow next and begin with the character " $V$ ". The special character (.) denotes the start of the value labels. Two examples of data item descriptions follow:


## SIPP 1990 WAVE 8 TOPICAL MODULE RESEARCH FILĖ DATA DICTIONARY

DATA SIZE BEGIN
D SUSEQNUM $5 \quad 1$

| Sequence number of sample unit |
| :--- |
| Primary sort key |

U All persons
0 ID 96
sample unit identifier
This identifier is created by scrambling
together the PSU, segment and serial of
the original sample address. It may be
used in matching sample units from
different waves.
Range $=(000000000: 999999999)$
U All persons
D ROTATION
Rotation 15

Range $=(1: 4)$
U All persons
D STATE 216

FIPS state code from the MST/GRIN file
U Alt persons


63 .Alaska, Idaho, Montana, Wyoming


## SIPP 1990 TOPICAL MODULE WAVE 8 RESEARCH FILE






## SIPP 1990 TOPICAL MODULE WAVE 8 RESEARCH FILE



data size begin
********************************************

* Fields TMIND2-TM8070, TM8154-TM8176, and *
* TM8262-TM8272 apply to the second *
* business


D TMIND2 3119
Three digit industry code for
business in TM8060-TM8070
Range $=(000: 999)$
U Persons who owned and operated a second business
v 000 .Not applicable
D TM8060 2122
Check Item T3 for business
Transcribe ID number for this
business from control card item 43
Range $=(-3:-3,00: 09)$
U Persons who owned and operated a second business
V $\quad-3$.Not listed on control card
$V \quad 00$.Not applicable
01-09 . ID number of business
D TM8062 124
Check Item T 4 for business
Has information about this business
already been obtained in an inter-
view for another household member?
Range $=(0: 2)$
U Persons who owned and operated a second business

| $v$ | 0 .Not universe |
| :--- | :--- |
| $v$ | 1 .Yes |
| $v$ | 2 .No skip to TM8068 |

D TM8064 3125
Person number of other owner of business
Range $=(000: 000,101: 999)$
$U$ Persons who owned and operated a second business with other owner
v 000 .Not applicable
v 101-999 。Person number
D TM8066 2128
ID number of business for other owner Range $=(-3:-3,00: 09)$
U Persons who owned and operated a second business with other owner


DATA SIZE BEGIN

U Persons who owned and operated a second business not ouned entirely by members of this household
$v$
$v$
$v$ -1 .DK 00 . Not applicable
V 01-99. Percent owned by household
D TM8166 i 145
What percentage of this (business/ practice) did ... own in ...'s own neme?
Range $=(-1: 99)$
U Persons who owned and operated a second business not owned entirely by members of this household
$v$
$v \quad 00$. Not applicable
V 01-99 . Percent ouned by ...
D TM8176 1147
Check Item I7 for business one
is "sole proprietorship" marked in TM8018?
Range $=(0: 2)$
U Persons who owned and operated a second business

| $v$ | 0 |
| :--- | :--- |
| $v$ | 1 . Not applicable |
| $v$ | 2 .Yes - skip to TM8276 |

**********************************************

* The next two fields are possible *
* answers to the question:
* 
* What was ...'s net income from this *
* (business/practice) in 1990? *

D TM8254 2148
Range $=(-4:-4,00: 00)$
U Persons who owned and operated a second
business
$v \quad 00$.Not applicable
$v \quad-4$.Lost money - enter loss in
.TM8252 and skip to TM8258
D TM8258 1150
Check Item T8 for business
Were any other household members
part owners of this business?
Range $=(0: 2)$

U Persons who owned and operated a second business
Apart from the net income already
reported for ...., did (other household
ouners) receive any net income in
1990 from this (business/practice)?
Range $=(-1:-1,00: 02)$
U Persons who owned and operated a second
business with other household owners
V -1 .DK - skip to TM8276
$v \quad 00$.Not applicable
$v \quad 01$.Yes
$v \quad 02$.No - skip to TM8276












## sOURCE OF DATA

The data were collected in the 1990 panel of the Survey of Income and Program Participation (SIPP). The SIPP universe is the noninstitutionalized resident population living in the United States. The population includes persons living in group quarters, such as dormitories, rooming houses, and religious group dwellings. Crew members of merchant vessels, Armed Forces personnel living in military barracks, and institutionalized persons, such as correctional facility inmates and nursing home residents, were not eligible to be in the survey. Also, United States citizens residing abroad were not eligible to be in the survey. Foreign visitors who work or attend school in this country and their families were eligible; all others were not eligible to be in the survey. With the exceptions noted above, persons who were at least 15 years of age at the time of the interview were eligible to be in the survey.

The 1990 panel of the SIPP sample is located in 230 Primary Sampling Units (PSUS) each consisting of a county or a group of contiguous counties. Within these PSUs, expected clusters of 2 living quarters (LQs) were systematically selected from lists of addresses prepared for the 1980 decennial census to form the bulk of the sample. To account for igs built within each of the sample areas after the 1980 census, a sample was drawn of permits issued for construction of residential LQs up until shortly before the beginning of the panel. In jurisdictions that do not issue building permits, small land areas were sampled and the LQs within were listed by field personnel and then clusters of 4 LQs were subsampled. In addition, sample IQs were selected from supplemental frames that included $L$ qs identified as missed in the 1980 Census and persons residing in group quarters at the time of the Census.

The 1990 panel differs from the other panels as a result of oversampling for low income. The oversample was constructed by taking a small subsample from the 1989 panel, and combing it with the 1990 panel. Variables such as race, ethnicity, and sex were used for the oversampling since low income data for 1989 panel households were unavailable. The 1989 panel subsample contains all Black Headed Households, all Hispanic Headed Households, all Households with Heads having no spouse present, living with relatives, and a random sample of all the other Household types. The latter random sample was done in an attempt to avoid bias in the sample.

Approximately 28,300 living quarters were designated for the 1990 panel. For Wave 1 of the 1990 panel, interviews were obtained from the occupants of about 21,900 of the 28,300 designated living quarters. Most of the remaining 6,400 living quarters in
the 1990 panel were found to be vacant, demolished, converted to nonresidential use, or otherwise ineligible for the survey. However, approximately 1,700 of the 6,400 living quarters in the 1990 panel were not interviewed because the occupants refused to be interviewed, could not be found at home, were temporarily absent, or were otherwise unavailable. Thus, occupants of about 93 percent of all eligible living quarters participated in wave 1 of the Survey for the 1990 panel. Sample loss at Wave 1 of the 1990 Panel was about $7.1 \%$ and is expected to increase to roughly $22.0 \%$ at the end of Wave 8 .

For Waves $2-8$, only original sample persons (Those in Wave 1 sample households and interviewed in Wave 1) and persons living with them were eligible to be interviewed. with certain restrictions, original sample persons were to be followed if they moved to a new address. When original sample persons moved without leaving a forwarding address or moved to extremely remote parts of the country and no telephone number was available, additional noninterviews resulted.

Sample households within a given panel are divided into four subsamples of nearly equal size. These subsamples are called rotation groups $1,2,3$, or 4 and one rotation group is interviewed each month. Each household in the sample was scheduled to be interviewed at 4 month intervals over a period of roughly 2 years beginning in February 1990. The reference period for the questions is the 4 -month period preceding the interview month. In general, one cycle of four interviews covering the entire sample, using the same questionnaire, is called a wave.

A unique feature of the SIPP design is overlapping panels. The overlapping design allows panels to be combined and essentially doubles the sample sizes. However, the 1990 panel is designed so that the first three waves do not overlap with other panels. (The 1988 and 1989 panels were prematurely terminated to provide the funding needed to enlarge the 1990 panel and allow oversampling to take place.) After the third wave, the 1990 panel overlaps with the 1991 panel. Selected interviews for the 1990 panel can be combined with interviews from the 1991 panel. Information necessary to do this is included later in this statement.

The public use files include core and supplemental (topical module) data. Core questions are repeated at each interview over the life of the panel. Topical modules include questions which are asked only in certain waves. The 1990 and 1991 panel topical modules are given in tables 1 and 2 respectively.

Tables 3 and 4 indicate the reference months and interview months for the collection of data from each rotation group for the 1990 and 1991 panels respectively. For example, Wave 1 rotation group 2 of the 1990 panel was interviewed in February 1990 and data for
the reference months October 1989 through January 1990 were collected.

Estimation. The estimation procedure used to derive SIPP person weights involved several stages of weight adjustments. Each person received a base weight equal to the inverse of his/her probability of selection. A noninterview adjustment factor was applied to the weight of every occupant of interviewed households to account for households which were eligible for the sample but were not interviewed. (Individual nonresponse within partially interviewed households was treated with imputation. No special adjustment was made for noninterviews in group quarters.) A factor was applied to each interviewed person's weight to account for the SIPP sample areas not having the same population distribution as the strata from which they were selected.

An additional stage of adjustment to persons' weights was performed to reduce the mean square error of the survey estimates by ratio adjusting SIPP sample esfimates to monthly Current Population Survey (CPS) estimates of the civilian (and some military) noninstitutional population of the United States by age, race, Spanish origin, sex, type of householder (married, single with relatives, single without relatives), and relationship to householder (spouse or other). The CPS estimates were themselves brought into agreement with estimates from the 1980 decennial census which were adjusted to reflect births, deaths, immigration, emigration, and changes in the Armed Forces since 1980. Also, an adjustment was made so that $a$ husband and wife within the same household were assigned equal weights.

Use of Weights. Users should be forewarned to apply the appropriate weights given on this file before attempting to calculate estimates. The weights vary between units due to the oversampling that took place. If analysis is done for the general population without applying the appropriate weights, the results will be erroneous. Each household and each person within each household on each wave tape has five weights. Four of these weights are reference month specific and therefore can be used only to form reference month estimates. Reference month estimates can be averaged to form estimates of monthly averages over some period of time. For example, using the proper weights, one can estimate the monthly average number of households in a specified income range over November and December 1990. To estimate monthly averages of a given measure (e.g., total, mean) over a number of consecutive months, sum the monthly estimates and divide by the number of months.

These special CPS estimates are slightly different from the published monthly CPS estimates. The differences arise from forcing counts of husbands to agree with counts of wives.

The remaining weight is interview month specific. This weight can be used to form estimates that specifically refer to the interview month (e.g., total persons currently looking for work), as well as estimates referring to the time period including the interview month and all previous months (e.g., total persons who have ever served in the military).

To form an estimate for a particular month, use the reference month weight for the month of interest, summing over all persons or households with the characteristic of interest whose reference period includes the month of interest. Multiply the sum by a factor to account for the number of rotations contributing data for the month. This factor equals four divided by the number of rotations contributing data for the month. For example, December 1989 data is only available from rotations 2, 3, and 4 for wave 1 of the 1990 panel (See table 3), so a factor of 4/3. (See Table 7) must be applied. To form an estimate for an interview month, use the procedure discussed above using the interview month weight provided on the file.

When estimates for months without four rotations worth of data are constructed from a wave file, factors greater than 1 must be applied. However, when core data from consecutive waves are used together, data from all four rotations may be available, in which case the factors are equal to 1.

These tapes contain no weight for characteristics that involve a person's or household's status over two or more months (e.g., number of households with a 50 percent increase in income between November and December 1990).

Producing Estimates for Census Regions and states. The total estimate for a region is the sum of the state estimates in that region. Using this sample, estimates for individual states are subject to very high variance and are not recommended. The state codes on the file are primarily of use for linking respondent characteristics with appropriate contextual variables (e.g., state-specific welfare criteria) and for tabulating data by userdefined groupings of states.

Producing Estimates for the Metropolitan Population. For Washington, DC and 11 states, metropolitan or non-metropolitan residence is identified (variable H*-METRO). In 34 additional states, where the non-metropolitan population in the sample was small enough to present a disclosure risk, a fraction of the metropolitan sample was recoded to be indistinguishable from nonmetropolitan cases ( $\mathrm{H} *-\mathrm{METRO}=2$ ). In these states, therefore, the cases coded as metropolitan (H*-METRO=1) represent only a subsample of that population.

In producing state estimates for a metropolitan characteristic, multiply the individual, family, or household weights by the
metropolitan inflation factor for that state, presented in table 5. (This inflation factor compensates for the subsampling of the metropolitan population and is 1.0 for the states with complete identification of the metropolitan population.)

The same procedure applies when creating estimates for particular identified MSA's or CMSA's-mapply the factor appropriate to the state. For multi-state MSA's, use the factor appropriate to each state part. For example, to tabulate data for the Washington, DC-MD-VA MSA, apply the Virginia factor of 1.0521 to weights for residents of the Virginia part of the MSA; Maryland and DC residents require no modification to the weights (i.e., their factors equal 1.0).

In producing regional or national estimates of the metropolitan population, it is also necessary to compensate for the fact that no metropolitan subsample is identified within two states (Mississippi and West Virginia) and one state-group (North Dakota - South Dakota - Iowa). Thus, factors in the right-hand column of table 5 should be used for regional and national estimates. The results of regional and national tabulations of the metropolitan population will be biased slightly. However, less than one-half of one percent of the metropolitan population is not represented.

Producing Estimates for the Non-Metropolitan Population. State, regional, and national estimates of the non-metropolitan population cannot be computed directly, except for Washington, DC and the 11 states where the factor for state tabulations in table 5 is 1.0. In all other states, the cases identified as not in the metropolitan subsample (METRO=2) are a mixture of nonmetropolitan and metropolitan households. Only an indirect method of estimation is available: first compute an estimate for the total population, then subtract the estimate for the metropolitan population. The results of these tabulations will be slightly biased.

Combined Panel Estimates. Both the 1990 and 1991 panels provide data for October 1990-August 1992. Thus, estimates for these time periods may be obtained by combining the corresponding panels. However, since the Wave 1 questionnaire differs from the subsequent waves' questionnaire, we recommend that estimates not be obtained by combining Wave 1 data of the 1991 panel (collected February - May of 1991) with data of the 1990 panel. In this case, use the estimate obtained from either panel. Additionally, even for other waves, care should be taken when combining data from two panels since questionnaires for the two panels differ somewhat and since the length of time in sample for interviews from the two panels differ.

Combined panel estimates may be obtained either (1) by combining estimates derived separately for the two panels or (2) by first combining data from the two files and then producing an estimate.

## 1. Combining Separate Estimates

Corresponding estimates from two consecutive year panels can be combined to create joint estimates by using the formula

$$
\begin{equation*}
\hat{J}=W \hat{I}_{1}+(1-W) \hat{J}_{2} \tag{A}
\end{equation*}
$$

```
`
J = joint estimate (total, mean, proportion, etc);
^
J}=\mp@code{estimate from the earlier panel;
^
J
W = weighting factor of the earlier panel.
```

To combine the 1990 and 1991 panels use a $W$ value of 0.608 unless one of the panels contributes no information to the estimate. In that case, the panel contributing information receives a factor of 1 . The other receives a factor of zero.

## 2. Combining Data from Separate Files

Start by first creating a file containing the data from the two panel files. Apply the weighting factor, $W$, to the weight of each person from the earlier panel and apply (1-W) to the weight of each person from the later panel. Estimates can then be produced using the same methodology as used to obtain estimates from a single panel.

Illustration for computing combined panel estimate.
Suppose SIPP estimates for Wave 5 of the 1990 panel show that there were 441,000 households with monthly December income above \$6000. Also, suppose SIPP estimates for Wave 2 of the 1991 panel show that there were 435,000 households with monthly December income above $\$ 6000$. Using formula (A), the joint level estimate is

$$
\begin{aligned}
\hat{J} & =(0.608)(441,000)+(0.392)(435,000) \\
& =438,648
\end{aligned}
$$

## ACCURACY OF THE ESTIMATES

SIPP estimates obtained from public use files are based on a sample; they may differ somewhat from the figures that would have been obtained if a complete census had been taken using the same questionnaire, instructions, and enumerators. There are two types of errors possible in an estimate based on a sample survey: nonsampling and sampling. The magnitude of SIPP sampling error can be estimated, but this is not true of nonsampling error. Found below are descriptions of sources of SIPP nonsampling error, followed by discussions of sampling error, its estimation, and its use in data analysis. More detailed discussions of the existence and control of nonsampling errors in the SIPP can be found in the ouality profile for the Survey of Income and Program Participation, May 1990, by Jabine, assisted by Ring and Petroni.

Nonsampling Variability. Nonsampling errors can be attributed to many sources, e.g., inability to obtain information about all cases in the sample, definitional difficulties, differences in the interpretation of questions, inability or unwillingness on the part of the respondents to provide correct information, inability to recall information, errors made in collection such as in recording or coding the data, errors made in processing the data, errors made in estimating values for missing data, biases resulting from the differing recall periods caused by the rotation pattern used and failure to represent all units within the universe (undercoverage). Quality control and edit procedures were used to reduce errors made by respondents, coders and interviewers.

Undercoverage in SIPP results from missed living quarters and missed persons within sample households. It is known that undercoverage varies with age, race, and sex. Generally, undercoverage is larger for males than for females and larger for blacks than for nonblacks. Ratio estimation to independent age-race-sex population controls partially corrects for the bias due to survey undercoverage. However, biases exist in the estimates to the extent that persons in missed households or missed persons in interviewed households have different characteristics than the interviewed persons in the same age-race-Spanish origin-sex group. Further, the independent population controls used have not be adjusted for undercoverage.

Some respondents do not respond to some of the questions. Therefore, the overall nonresponse rate for some items such as income and other money related items is higher than the nonresponse rates presented on page 2. The Bureau uses complex techniques to adjust the weights for nonresponse, but the success of these techniques in avoiding bias is unknown.

Comparability with Other statistics. Caution should be exercised when comparing data from these files with data from other SIPP products or with data from other surveys. The comparability problems are caused by sources such as the seasonal patterns for many characteristics, definitional differences, and different nonsampling errors.

Sampling Variability. Standard errors indicate the magnitude of the sampling variability. They also partially measure the effect of some nonsampling errors in response and enumeration, but do not measure any systematic biases in the data. The standard errors for the most part measure the variations that occurred by chance because a sample rather than the entire population was surveyed.

Confidence Intervals. The sample estimate and its standard error enable one to construct confidence intervals, ranges that would include the average result of all possible samples with a known probability. For example, if all possible samples were selected, each of these being surveyed under essentially the same conditions and using the same sample design, and if an estimate and its standard error were calculated from each sample, then:

1. Approximately 68 percent of the intervals from one standard error below the estimate to one standard error above the estimate would include the average result of all possible samples.
2. Approximately 90 percent of the intervals from 1.6 standard errors below the estimate to 1.6 standard errors above the estimate would include the average result of all possible samples.
3. Approximately 95 percent of the intervals from two standard errors below the estimate to two standard errors above the estimate would include the average result of all possible samples.

The average estimate derived from all possible samples is or is not contained in any particular computed interval. However, for a particular sample, one can say with a specified confidence that the average estimate derived from all possible samples is included in the confidence interval.

Hypothesis Testing. Standard errors may also be used for hypothesis testing, a procedure for distinguishing between population parameters using sample estimates. The most common types of hypotheses tested are 1) the population parameters are identical versus 2) they are different. Tests may be performed at various levels of significance, where a level of significance is the probability of concluding that the parameters are different when, in fact, they are identical.

To perform the most common hypothesis test, compute the difference $X_{A}-X_{B}$, where $X_{A}$ and $X_{B}$ are sample estimates of the parameters of interest. A later section explains how to derive an estimate of the standard error of the difference $X_{A}-X_{B}$. Let that standard error be $s_{D I F F}$. If $X_{A}-X_{B}$ is between -1.6 times $s_{D I F F}$ and +1.6 times $s_{\text {DIFF }}$ no conclusion about the parameters is justified at the 10 percent significance level. If on the other hand, $X_{A}-X_{B}$ is smaller than -1.6 times $s_{\text {Diff }}$ or larger than +1.6 times $s_{\text {DIFF }}$, the observed difference is significant at the 10 percent level. In this event, it is commonly accepted practice to say that the parameters are different. Of course, sometimes this conclusion will be wrong. When the parameters are, in fact, the same, there is a 10 percent chance of concluding that they are different.

Note when using amall estimates. Because of the large standard errors involved, there is little chance that summary measures would reveal useful information when computed on a smaller base than 200,000. Also, care must be taken in the interpretation of small differences. For instance, in case of a borderline difference, even a small amount of nonsampling error can lead to a wrong decision about the hypotheses, thus distorting a seemingly valid hypothesis test.

Standard Error Parameters and Tables and Their Use. Most SIPP estimates have greater standard errors than those obtained through a simple random sample because clusters of living quarters are sampled. To derive standard errors that would be applicable to a wide variety of estimates and could be prepared at a moderate cost, a number of approximations were required. Estimates with similar standard error behavior were grouped together and two parameters (denoted "a" and "b") were developed to approximate the standard error behavior of each group of estimates. These "a" and "b" parameters are used in estimating standard errors and vary by type of estimate and by subgroup to which the estimate applies. Table 6 provides base "a" and "b" parameters to be used for estimates obtained from core data and for some estimates from topical module data. These parameters are considered preliminary. Revised parameters are soon to follow.

The factors provided in table 7 when multiplied by the base parameters of table 6 for a given subgroup and type of estimate give the "a" and "b" parameters for that subgroup and estimate type for the specified reference period. For example, the base "a" and "b" parameters for total number of households are -0.0000664 and 6,043, respectively. For Wave 1 the factor for October 1989 is 4.0000 since only 1 rotation month of data is available. So, the "a" and "b" parameters for total household income in October 1989 based on Wave 1 are -0.0002656 and 24,172, respectively. Also for Wave 1 , the factor for the first quarter of 1990 is 1.2222 since 9 rotation months of data are available
(rotations 1 and 4 provide 3 rotations months each, while rotations 2 and 3 provide 1 and 2 rotation months, respectively). So, the "a" and "b" parameters for total number of households in the first quarter of 1990 are -0.0000812 and 7,386 , respectively for Wave 1.

The "a" and "b" parameters may be used to calculate the standard error for estimated numbers and percentages. Because the actual standard error behavior was not identical for all estimates within a group, the standard errors computed from these parameters provide an indication of the order of magnitude of the standard error for any specific estimate. Methods for using these parameters for computation of approximate standard errors are given in the following sections.

For those users who wish further simplification, we have also provided preliminary general standard errors in tables 8 through 11 for making estimates with the use of data from all four rotations. Note that these standard errors must be adjusted by a factor (f) from table 6. The standard errors resulting from this simplified approach are less accurate. Methods for using these parameters and tables for computation of standard errors are given in the following sections. Standard errors provided in tables 8 through 11 will change when revised parameters are available.

For the 1990, 1991 combined panel parameters, multiply the parameters in table 6 by the forthcoming appropriate factor from table 15. The factors later provided in table 16 adjust parameters for the number of rotation months available for a given estimate. These factors, when multiplied by the combined panel parameters derived from table 6 for a given subgroup and type of estimate, give the "a" and "b" parameters for that subgroup and estimate type for the specified combined reference period.

For calculating 1990 topical module variances, table 12 is designated to later provide base "a" and "b" parameters. Table 13 also in the near future will provide base "a" and "b" parameters for computing the 1990, 1991 combined panel topical module variances. These parameters will also be provided when revised generalized variance parameters are available.

Procedures for calculating standard errors for the types of estimates most commonly used are described below. Note specifically that these procedures apply only to reference month estimates or averages of reference month estimates. Refer to the section "Use of Weights" for a more detailed discussion of the construction of estimates. Stratum codes and half sample codes are included on the tapes to enable the user to compute the variances directly by methods such as balanced repeated replications (BRR). William G. Cochran provides a list of
references discussing the application of this technique. (See Sampling Techniques, 3rd Ed., New York: John Wiley and Sons, 1977, p. 321.)

Standard Errors of estimated numbers. The approximate standard error, $s_{x}$, of an estimated number of persons, households, families, unrelated individuals and so forth, can be obtained in two ways. Both apply when data from all four rotations are used to make the estimate. However, only the second method should be used when less than four rotations of data are available for the estimate. Note that neither method should be applied to dollar values.

It may be obtained by the use of the formula

$$
\begin{equation*}
s_{x}=f_{s} \tag{1}
\end{equation*}
$$

where $f$ is the appropriate "f" factor from table 6, and $s$ is the standard error on the estimate obtained by interpolation from table 8 or 9. Alternatively, $s_{x}$ may be approximated by the formula

$$
\begin{equation*}
s_{x}=\sqrt{a x^{2}+b x} \tag{2}
\end{equation*}
$$

from which the standard errors in tables 8 and 9 were calculated. Here $x$ is the size of the estimate and "a" and "b" are the parameters associated with the particular type of characteristic being estimated. Use of formula 2 will provide more accurate results than the use of formula 1.

## Illustration.

Suppose SIPP estimates for Wave 1 of the 1990 panel show that there were 472,000 households with monthly household income above $\$ 6,000$. The appropriate parameters and factor from table 6 and the appropriate general standard error from table 8 are
$\mathrm{a}=-0.0000664$
$b=6,043$
$f=1.00$
$s=53,300$

Using formula 1, the approximate standard error is

$$
s_{x}=53,300
$$

Using formula 2, the approximate standard error is

$$
\sqrt{(-0.0000664)(472,000)^{2}+(6,043)(472,000)}=53,300
$$

Using the standard error based on formula 2, the approximate 90percent confidence interval as shown by the data is from 387,000 to 557,000. Therefore, a conclusion that the average estimate derived from all possible samples lies within a range computed in this way would be correct for roughly $90 \%$ of all samples.

Illustration for computina standard errors for combined panel estimates. Will be provided when combining factors are available.
standard Error of a Mean. A mean is defined here to be the average quantity of some item (other than persons, families, or households) per person, family or household. For example, it could be the average monthly household income of females age 25 to 34. The standard error of a mean can be approximated by formula 3 below. Because of the approximations used in developing formula 3, an estimate of the standard error of the mean obtained from this formula will generally underestimate the true standard error. The formula used to estimate the standard error of a mean $\bar{x}$ is

$$
\begin{equation*}
s_{\bar{x}}=\sqrt{\left(\frac{b}{y}\right) s^{2}} \tag{3}
\end{equation*}
$$

where $y$ is the size of the base, $s^{2}$ is the estimated population variance of the item and $b$ is the parameter associated with the particular type of item.
The population variance $s^{2}$ may be estimated by one of two methods. In both methods we assume $x_{i}$ is the value of the item for unit i. (Unit may be person, family, or household). To use the first method, the range of values for the item is divided into $c$ intervals. The upper and lower boundaries of interval $j$ are $Z_{j-1}$ and $Z_{i}$, respectively. Each unit is placed into one of $c$ groups such that $Z_{j-1}<X_{i} \leq Z_{j}$.

The estimated population variance, $s^{2}$, is given by the formula:

$$
\begin{equation*}
s^{2}=\sum_{j=1}^{c} \quad p_{j} m_{f}^{2}-\overline{x^{2}} \tag{4}
\end{equation*}
$$

where $p_{1}$ is the estimated proportion of units in group $j$, and $m_{j}$ $=\left(Z_{j-1}+Z_{j}\right) / 2$. The most representative value of the item in group $j$ is assumed to be $m_{1}$. If group $c$ is open-ended, i.e., no upper interval boundary exists, then an approximate value for $m_{c}$ is

$$
m_{c}=\frac{3}{2} z_{c-2}
$$

The mean, $\bar{x}$ can be obtained using the following formula:

$$
\bar{x}=\sum_{j=1}^{c} p_{f} m_{j}
$$

In the second method, the estimated population variance is given by

$$
\begin{equation*}
s^{2}=\frac{\sum_{i=1}^{n} w_{1} x_{i}^{2}}{\sum_{i=1}^{n} w_{i}}-\bar{x}^{2} \tag{5}
\end{equation*}
$$

where there are $n$ units with the item of interest and $w_{i}$ is the final weight for unit i. The mean, $\overline{\boldsymbol{x}}$, can be obtained from the formula

$$
\bar{x}=\frac{\sum_{i=1}^{n} w_{i} x_{i}}{\sum_{i=1}^{n} w_{i}}
$$

When forming combined estimates using formula (A), $s^{2}$, given by formula (4), should be calculated by forming a distribution for each panel. The range of values for the item will be divided into intervals. Combined estimates for each interval can be obtained using formula (A). Formula (4) can be applied to the combined distribution. To calculate $\bar{x}$ and $s^{2}$ given by formula (5), replace $x_{i}$ by $W x_{i}$ for $x_{i}$ from the earlier panel and (1-W) $x_{i}$ for $x_{i}$ from the later panel.

## Illustration.

Suppose that based on Wave 1 data, the distribution of monthly cash income for persons age 25 to 34 during the month of January 1988 is given in table 14.

Using formula 4 and the mean monthly cash income of $\$ 2,530$ the approximate population variance, $s^{2}$, is

$$
\begin{aligned}
s^{2}= & \left(\frac{1,371}{39,851}\right)(150)^{2}+\left(\frac{1,651}{39,851}\right)(450)^{2}+\ldots \ldots+ \\
& \left(\frac{1,493}{39,851}\right)(9,000)^{2}-(2,530)^{2}=3,159,887 .
\end{aligned}
$$

Using formula 3, the appropriate base "b" parameter and factor from table 6, the estimated standard error of a mean $\bar{x}$ is

$$
s_{\bar{x}}=\sqrt{\left(\frac{4,890}{39,851,000}\right)(3,159,887)}=\$ 20
$$

standard error of an aggregate. An aggregate is defined to be the total quantity of an item summed over all the units in a group. The standard error of an aggregate can be approximated using formula 6.

As with the estimate of the standard error of a mean, the estimate of the standard error of an aggregate will generally underestimate the true standard error. Let $y$ be the size of the base, $s^{2}$ be the estimated population variance of the item obtained using formula (4) or (5) and b be the parameter associated with the particular type of item. The standard error of an aggregate is:

$$
\begin{equation*}
s_{x}=\sqrt{(b)(y) s^{2}} \tag{6}
\end{equation*}
$$

standard Errors of Estimated Percentages. The reliability of an estimated percentage, computed using sample data for both numerator and denominator, depends upon both the size of the percentage and the size of the total upon which the percentage is based. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentages, particularly if the percentages are 50 percent or more, e.g., the percent of people employed is more reliable than the estimated number of people employed. When the numerator and denominator of the percentage have different parameters, use the parameter (and appropriate factor) of the numerator. If proportions are presented instead of percentages, note that the standard error of a proportion is equal to the standard error of the corresponding percentage divided by 100.

There are two types of percentages commonly estimated. The first is the percentage of persons, families or households sharing a particular characteristic such as the percent of persons owning their own home. The second type is the percentage of money or some similar concept held by a particular group of persons or held in a particular form. Examples are the percent of total wealth held by persons with high income and the percent of total income received by persons on welfare.

For the percentage of persons, families, or households, the approximate standard error, $s_{(x, p),}$ of the estimated percentage $p$ can be obtained by the formula

$$
\begin{equation*}
s_{(x, p)}=f s \tag{7}
\end{equation*}
$$

when data from all four rotations are used to estimate p. In this formula, $f$ is the appropriate "f" factor from table 6 and $s$ is the standard error of the estimate from table 10 or 11.

Alternatively, it may be approximated by the formula

$$
\begin{equation*}
s_{(x, p)}=\sqrt{\frac{b}{x}(p)(100-p)} \tag{8}
\end{equation*}
$$

from which the standard errors in tables 10 and 11 were calculated. Here $x$ is the size of the subclass of social units which is the base of the percentage, $p$ is the percentage ( $0<p<100$ ), and $b$ is the parameter associated with the characteristic in the numerator. Use of this formula will give more accurate results than use of formula 7 above and should be used when data from less than four rotations are used to estimate p.

## Illustration.

Suppose that, in the month of January 1990, 6.7 percent of the 16,812,000 persons in nonfarm households with a mean monthly household cash income of $\$ 4,000$ to $\$ 4,999$, were black. Using formula 8 and the "b" parameter of 4,755 from table 6 and a factor of 1 for the month of January 1990 from table 7, the approximate standard error is

$$
\sqrt{\frac{4,755}{(16,812,000)}(6.7)(100-6.7)}=0.42 \text { percent }
$$

consequently, the 90 percent confidence interval as shown by these data is from 6.0 to 7.4 percent.

For percentages of money, a more complicated formula is required. A percentage of money will usually be estimated in one of two ways. It may be the ratio of two aggregates:

$$
p_{I}=100\left(X_{\lambda} / X_{N}\right)
$$

or it may be the ratio of two means with an adjustment for different bases:

$$
p_{I}=100\left(\hat{F}_{\lambda} \bar{X}_{\lambda} / \bar{X}_{H}\right)
$$

where $X_{A}$ and $x_{N}$ are aggregate money figures, $\bar{x}_{\lambda}$ and $\bar{x}_{N}$ are mean money figures, and $\hat{A}_{\mathrm{A}}$ is the estimated number in group $A$ divided by the estimated number in group N. In either case, we estimate the standard error as

$$
\begin{equation*}
s_{I}=\sqrt{\left(\frac{\hat{B}_{A} \bar{x}_{A}}{\bar{x}_{N}}\right)^{2}\left[\left(\frac{s_{p}}{\bar{B}_{A}}\right)^{2}+\left(\frac{s_{A}}{\bar{x}_{A}}\right)^{2}+\left(\frac{s_{z}}{\bar{x}_{z}}\right)^{2}\right]} \tag{9}
\end{equation*}
$$

where $s_{p}$ is the standard error of $\hat{p}_{\mathbf{A}}, s_{A}$ is the standard error of $\bar{x}_{A}$ and $s_{B}$ is the standard error of $\bar{X}_{N}$. To calculate $s_{p}$, use formula 8. The standard errors of $\bar{X}_{N}$ and $\bar{X}_{\lambda}$ may be calculated using formula 3.

It should be noted that there is frequently some correlation between $\hat{p}_{A}, \bar{x}_{N^{\prime}}$ and $\bar{x}_{A}$. Depending on the magnitude and sign of the correlations, the standard error will be over or underestimated.

Illustration.
Suppose that in January 1990, $9.8 \%$ of the households own rental property, the mean value of rental property is $\$ 72,121$, the mean value of assets is $\$ 78,734$, and the corresponding standard errors are 0.25\%, \$4678, and \$2287. In total there are 86,790,000 households. Then, the percent of all household assets held in rental property is

$$
=100\left((0.098) \frac{72121}{78734}\right)=9.08
$$

Using formula (9), the appropriate standard error is

$$
\begin{aligned}
s_{I} & =\sqrt{\left(\frac{(0.098)(72121)}{78734}\right)^{2}\left[\left(\frac{0.0025}{0.098}\right)^{2}+\left(\frac{4678}{72121}\right)^{2}+\left(\frac{2287}{78734}\right)^{2}\right]} \\
& =0.007 \\
& =0.7 \%
\end{aligned}
$$

standard Error of a Difference. The standard error of a difference between two sample estimates is approximately equal to

$$
\begin{equation*}
s_{(x-y)}=\sqrt{s_{x}^{2}+s_{y}^{2}} \tag{10}
\end{equation*}
$$

where $s_{x}$ and $s_{y}$ are the standard errors of the estimates $x$ and $y$. The estimates can be numbers, percents, ratios, etc. The above formula assumes that the correlation coefficient between the characteristics estimated by $x$ and $y$ is zero. If the correlation is really positive (negative), then this assumption will tend to cause overestimates (underestimates) of the true standard error.

## Illustration.

Suppose that SIPP estimates show the number of persons age 35-44 years with monthly cash income of $\$ 4,000$ to $\$ 4,999$ was $3,186,000$ in the month of January 1990 and the number of persons age 25-34 years with monthly cash income of $\$ 4,000$ to $\$ 4,999$ in the same time period was $2,619,000$. Then, using parameters from table 6 and formula 2, the standard errors of these numbers are approximately 124,000 and 112,000, respectively. The difference in sample estimates is 567,000 and, using formula 10 , the approximate standard error of the difference is

$$
\sqrt{(124,000)^{2}+(112,000)^{2}}=167,000
$$

Suppose that it is desired to test at the 10 percent significance level whether the number of persons with monthly cash income of $\$ 4,000$ to $\$ 4,999$ was different for persons age $35-44$ years than for persons age 25-34 years. To perform the test, compare the difference of 567,000 to the product $1.6 \times 167,000=267,200$. Since the difference is greater than 1.6 times the standard error of the difference, the data show that the two age groups are significantly different at the 10 percent significance level.

Standard Error of a Median. The median quantity of some item such as income for a given group of persons, families, or households is that quantity such that at least half the group have as much or more and at least half the group have as much or less. The sampling variability of an estimated median depends upon the form of the distribution of the item as well as the size of the group. To calculate standard errors on medians, the procedure described below may be used.

An approximate method for measuring the reliability of an estimated median is to determine a confidence interval about it. (See the section on sampling variability for a general discussion of confidence intervals.) The following procedure may be used to estimate the 68-percent confidence limits and hence the standard error of a median based on sample data.

1. Determine, using either formula 7 or formula 8 , the standard error of an estimate of 50 percent of the group;
2. Add to and subtract from 50 percent the standard error determined in step 1;
3. Using the distribution of the item within the group, calculate the quantity of the item such that the percent of the group owning more is equal to the smaller percentage found in step 2. This quantity will be the upper limit for the 68 -percent confidence interval. In a similar fashion, calculate the quantity of the item such that the percent of the group owning more is equal to the larger percentage found in step 2. This quantity will be the lower limit for the 68-percent confidence interval;
4. Divide the difference between the two quantities determined in step 3 by two to obtain the standard error of the median.

To perform step 3, it will be necessary to interpolate. Different methods of interpolation may be used. The most common are simple linear interpolation and Pareto interpolation. The appropriateness of the method depends on the form of the distribution around the median. If density is declining in the area, then we recommend Pareto interpolation. If density is fairly constant in the area, then we recommend linear interpolation. Note, however, that Pareto interpolation can never be used if the interval contains zero or negative measures of the item of interest. Interpolation is used as follows. The quantity of the item such that "p" percent own more is

$$
\begin{equation*}
X_{p N}=\exp \left[\left(\operatorname{Ln}\left(\frac{p N}{N_{1}}\right) \quad \operatorname{Ln}\left(\frac{N_{2}}{N_{1}}\right)\right) \operatorname{Ln}\left(\frac{A_{2}}{A_{1}}\right)\right] A_{1} \tag{11}
\end{equation*}
$$

if Pareto Interpolation is indicated and

$$
\begin{equation*}
X_{P N}=\left[\frac{P N-N_{1}}{N_{2}-N_{1}} \quad\left(A_{2}-A_{1}\right)+A_{1}\right] \tag{12}
\end{equation*}
$$

if linear interpolation is indicated, where $N$ is the size of the group,
$A_{1}$ and $A_{2}$ are the lower and upper bounds, respectively, of the interval in which $X_{p N}$ falls,
$N_{1}$ and $N_{2} \quad$ are the estimated number of group members owning more than $A_{1}$ and $A_{2}$, respectively,
exp refers to the exponential function and
In refers to the natural logarithm function.

## Illustration.

To illustrate the calculations for the sampling error on a median, we return to table 14. The median monthly income for this group is $\$ 2,158$. The size of the group is $39,851,000$.

1. Using formula 8, the standard error of 50 percent on a base of $39,851,000$ is about 0.6 percentage points.
2. Following step 2, the two percentages of interest are 49.4 and 50.6.
3. By examining table 14, we see that the percentage 49.4 falls in the income interval from 2000 to 2499. (Since 55.5\% receive more than $\$ 2,000$ per month, the dollar value corresponding to 49.4 must be between $\$ 2,000$ and $\$ 2,500$ ). Thus, $A_{1}=\$ 2,000, A_{2}=\$ 2,500, N_{1}=22,106,000$, and $N_{2}=$ 16,307,000.

In this case, we decided to use Pareto interpolation. Therefore, the upper bond of a 68\% confidence interval for the median is

$$
\$ 2,000 \exp \left[\left(\operatorname{Ln}\left(\frac{(.494)(39,851,000\rangle}{22,106,000}\right) \quad \operatorname{In}\left(\frac{16,307,000}{22,106,000}\right)\right) \operatorname{Ln}\left(\frac{2,500}{2,000}\right)\right]=\$ 2177
$$

Also by examining table 14, we see that 50.6 falls in the same income interval. Thus, $A_{1}, A_{2}, N_{1}$ and $N_{2}$ are the same. We also use Pareto interpolation for this case. So the lower bound of a 68\% confidence interval for the median is

$$
\$ 2,000 \exp \left[\left(\Sigma \sim\left(\frac{(.506)(39,851,000)}{22,106,000}\right) \quad \quad L r\left(\frac{16,307,000}{22,106,000}\right)\right) L\left(\frac{2,500}{2,000}\right)\right]=\$ 2137
$$

Thus, the 68-percent confidence interval on the estimated median is from \$2137 to \$2177. An approximate standard error is

$$
\frac{\$ 2177-\$ 2137}{2}=\$ 20
$$

Standard Errors of Ratios of Means and Medians. The standard error for a ratio of means or medians is approximated by:

$$
\begin{equation*}
s_{\frac{x}{y}}=\sqrt{\left(\frac{x}{y}\right)^{2}\left[\left(\frac{s_{y}}{y}\right)^{2}+\left(\frac{s_{x}}{x}\right)^{2}\right]} \tag{13}
\end{equation*}
$$

where $x$ and $y$ are the means or medians, and $s_{x}$ and $s_{y}$ are their associated standard errors. Formula 13 assumes that the means are not correlated. If the correlation between the population means estimated by $x$ and $y$ are actually positive (negative), then this procedure will tend to produce overestimates (underestimates) of the true standard error for the ratio of means.

SMD: DButler:sc:DBUT133

| Wave | Topical Module |
| :---: | :---: |
| 1 | None |
| 2 | Recipiency History <br> Employment History <br> Work Disability History <br> Education and Training History <br> Marital History <br> Migration History <br> Fertility History <br> Household Relationships |
| 3 | Child Care Arrangements Child Support Agreements Support of Non-household Members Utilization of Health Care Services Functional Limitations \& Disability Work Schedule |
| 4 | Assets \& Liabilities <br> Retirement Expectations \& Pensions Plan Coverage <br> Real Estate, Property, and Vehicles |
| 5 | Taxes <br> Annual Income and Retirement Accounts <br> School Enrollment and Financing |
| 6 | Child Support Agreements Support of Non-household Members Utilization of Health Care Services Functional Limitations \& Disability Not in Labor Force Spells |
| 7 | Selected Financial Assets <br> Medical Expenses \& Work Disability <br> Real Estate <br> Shelter Costs <br> Dependent Care <br> Vehicles |
| 8 | Annual Income \& Retirement Accounts Taxes <br> School Enrollment \& Financing |

Table 2. 1991 Panel Topical Modules for Waves 1 through $5^{1}$

Wave
1
2

3

4

5

Topical Module
None
Welfare History Recipiency History
Employment History
Work Disability History
Education and Training History
Marital History
Migration History
Fertility History
Household Relationships
Work Schedule
Child Care Arrangements
Child Support Agreements
Support for Non-household Members
Functional Limitations \& Disability Utilization of Health Care Services
Selected Financial Assets
Medical Expenses \& Work Disability
Real Estate
Shelter Costs
Dependent Care
Vehicles
Taxes
Annual Income and Retirement Accounts School Enrollment and Financing

Topical Modules for waves 6 through 8 are not yet available.

## Table 3. Reference Months for Each Interview Month - 1990 Panel



Table 4. Reference Months for Each Interview Month - 1991 Panel

Reference Period

| Menth of Interview | Wave/ Rotation | $\begin{aligned} & \frac{\text { 4th Quarter }}{(1990)} \\ & \text { Oet Nov Dec } \end{aligned}$ | $\begin{aligned} & \frac{\text { 1st Quarter }}{\text { (1991) }} \\ & \text { Jan Feb Mar } \end{aligned}$ | $\begin{aligned} & \frac{\text { 2nd Quarter }}{(1991)} \\ & \text { Apr May Jun } \end{aligned}$ | $\begin{aligned} & \frac{3 \text { 3rd Quarter }}{\text { (1991) }} \\ & \text { dul Aug Sep } \end{aligned}$ | $\begin{aligned} & \frac{\text { 4th Quarter }}{(1991)} \\ & \text { Oet Nov Dee } \end{aligned}$ | -•• | $\begin{aligned} & \frac{\text { 2nd Querter }}{(1993)} \\ & \text { Apr May Jun } \end{aligned}$ | $\begin{aligned} & \frac{3 \text { rd Quarter }}{(1993)} \\ & \text { Jul Aug Sep } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Feb 91 | $1 / 2$ | $x \quad \times$ | $x$ |  |  |  |  |  |  |
| Mar | 1/3 | $x \quad x$ | $x$ x |  |  |  |  |  |  |
| Apr | 1/4 | $\mathbf{x}$ | $x \quad x \quad x$ |  |  |  |  |  |  |
| May | 1/1 |  | $x \quad x \quad x$ | $x$ |  |  |  |  |  |
| dun | $2 / 2$ |  | $x \quad x$ | $x \quad x$ |  |  |  |  |  |
| Jul | $2 / 3$ |  | X | $x \quad x \quad x$ |  |  |  |  |  |
| Aus | $2 / 4$ |  |  | $x \quad x \quad x$ | $x$ |  |  |  |  |
| Sept | 2/1 |  |  | $x \quad x$ | $x \quad x$ |  |  |  |  |
| Oct | $3 / 2$ |  |  | X | $x \quad x \quad x$ |  |  |  |  |
| Hov | 3/3 |  |  |  | $x \quad x \quad x$ | $x$ |  |  |  |
| Dee | 3/4 |  |  |  | X X |  |  |  |  |
| $\bullet$ |  |  |  |  |  |  | $\cdots$ |  |  |
| Sept 93 | $8 / 1$ |  |  |  |  |  | $\bigcirc$ | $\mathrm{x} \times$ | $\times \quad \mathrm{x}$ |

Factors for
use in State
or CMSA (MSA)
Tabulations
Northeast: Connecticut Maine
Massachusetts
New Hampshire
New Jersey
New York Pennsylvania Rhode Island Vermont
Midwest: Illinois
Indiana
Iowa
Kansas
Michigan
Minnesota
Missouri
Nebraska
North Dakota Ohio
South Dakota Wisconsin
South:

Factors for use in Regional or National Tabulations

| 1.0387 | 1.0387 |
| :---: | :---: |
| 1.2219 | 1.2219 |
| 1.0000 | 1.0000 |
| 1.2234 | 1.2234 |
| 1.0000 | 1.0000 |
| 1.0000 | 1.0000 |
| 1.0096 | 1.0096 |
| 1.2506 | 1.2506 |
| 1.2219 | 1.2219 |
| 1.0000 | 1.0110 |
| 1.0336 | 1.0450 |
| --- |  |
| 1.2912 | 1.3055 |
| 1.0328 | 1.0442 |
| 1.0366 | 1.0480 |
| 1.0756 | 1.0874 |
| 1.6289 | 1.6468 |
|  |  |
| 1.0233 | 1.0346 |
| 1.0188 | 1.0300 |
| 1.1574 | 1.1595 |
| 1.6150 | 1.6179 |
| 1.5593 | 1.5621 |
| 1.0000 | 1.0018 |
| 1.0140 | 1.0158 |
| 1.0142 | 1.0160 |
| 1.2120 | 1.2142 |
| 1.0734 | 1.0753 |
| 1.0000 | 1.0018 |
| --- |  |
| 1.0000 | 1.0018 |
| 1.0793 | 1.0812 |
| 1.0185 | 1.0203 |
| 1.0517 | 1.0536 |
| 1.0113 | 1.0131 |
| 1.0521 | 1.0540 |
| --- |  |

- indicates no metropolitan subsample is identified for the state

Table 5 cont'd. Metropolitan Subsample Factors to be Applied to Compute National and Subnational Estimates

Factors for use in State or CMSA (MSA) Tabulations
West:
1.4339
1.0117
1.0000
1.1306
1.0000
1.4339
1.4339
1.0000
1.0000
1.1317
1.0000
1.0456
1.4339

Factors for use in Regional or National Tabulations

Alaska
Arizona
California
Colorado
Hawaii
Idaho
Montana
Nevada
New Mexico Oregon
Utah
Washington
Wyoming
1.4339
1.0117
1.0000
1.1306

1. 0000
1.4339
1.4339
1.0000
1.0000
1.1317
1.0000
1.0456
1.4339

- indicates no metropolitan subsample is identified for the state

| Characteristics | Parameters |  |  |
| :---: | :---: | :---: | :---: |
| TOTAL PERSONS | as | $\underline{b}$ | $\underline{ \pm}$ |
| 16+ Program Participation and Benefits, Poverty |  |  |  |
| Both Sexes | -0.0000843 | 14344 | 0.90 |
| Male | -0.0001772 | 14344 |  |
| Female | -0.0001604 | 14344 |  |
| 16+ Income and Labor Force (5) |  |  |  |
| Male | -0.0000605 | 4890 |  |
| Female | -0.0000547 | 4890 |  |
| 16+ Pension Plan ** (4) |  |  |  |
| Both Sexes | -0.0000525 | 8956 | 0.71 |
| Male | -0.0001108 | 8956 |  |
| Female | -0.0001001 | 8956 |  |
| All Others *** (6) |  |  |  |
| Both Sexes | -0.0000771 | 17784 | 1.00 |
| Male | -0.0001595 | 17784 |  |
| Female | -0.0001493 | 17784. |  |
| WHITE PERSONS |  |  |  |
| 6+ Program Participation |  |  |  |
| Both Sexes | -0.0000934 | 15898 | 0.95 |
| Male | -0.0001964 | 15898 |  |
| Female | -0.0001778 | 15898 |  |
| 16+ Income and Labor Force (5) |  |  |  |
| Both Sexes | -0.0000318 | 5420 | 0.55 |
| Male | -0.0000670 | 5420 |  |
| Female | -0.0000606 | 5420 |  |
| 16+ Pension Plan ** (4) |  |  |  |
| Both Sexes | -0.0000582 | 9926 | 0.75 |
| Male | -0.0001228 | 9926 |  |
| Female | -0.0001110 | 9926 |  |
| All Others *** (6) |  |  |  |
| Both Sexes | -0.0000855 | 19710 | 1.05 |
| Male | -0.0001768 | 19710 |  |
| Female | -0.0001655 | 19710 |  |


| Characteristics | Parameters |  |  |
| :--- | :---: | :---: | ---: |
| BLACK PERSONS | $\underline{a}$ | $\underline{b}$ | $\underline{f}$ |
| Poverty (1) |  |  | . |
| Both Sexes | -0.0003182 | 8843 | 0.71 |
| Male | -0.0006793 | 8843 |  |
| Female | -0.0005987 | 8843 |  |
|  |  |  |  |
| All Others *** (2) |  |  |  |
| Both Sexes | -0.0001723 | 4755 | 0.52 |
| Male | -0.0003704 | 4755 |  |
| Female | -0.0003223 | 4755 |  |

## HISPANIC PERSONS

Poverty (1)

| Both Sexes | -0.0000609 | 10374 | 0.76 |
| :--- | :--- | :--- | :--- |
| Male | -0.0001282 | 10374 |  |
| Female | -0.0001160 | 10374 |  |
| thers *** (2) |  |  |  |
| Both Sexes | -0.0002294 | 4755 | 0.52 |
| Male | -0.0004589 | 4755 |  |
| Female | -0.0006727 | 4755 |  |

HOUSEHOLDS

| Total | -0.0000641 | 6043 | 1.00 |
| :--- | :--- | :--- | :--- |
| White | -0.0000823 | 6698 | 1.05 |
| Black | -0.0002888 | 3018 | 0.71 |
| Hispanics | -0.0005290 | 3018 | 0.71 |

* For cross-tabulations, use the parameters of the characteristic with the smaller number within the parentheses.
** Use the "16+ Pension Plan" parameters for pension plan tabulations of persons 16+ in the labor force. Use the "All Others" parameters for retirement tabulations, 0+ program participation, $0+$ benefits, $0+$ income, and $0+$ labor force tabulations, in addition to any other types of tabulations not specifically covered by another characteristic in this table.
*** Use the "All Others" parameter for any type of tabulation not specifically covered by another characteristic in this table.

Table 7. Factors to be Applied to Table 6 Base Parameters to Obtain Parameters for Various Reference Periods
\# of available rotation months ${ }^{1}$
Monthly estimate

| 1 | 4.0000 |
| :--- | :--- |
| 2 | 2.0000 |
| 3 | 1.3333 |
| 4 | 1.0000 |

Quarterly estimate

| 6 | 1.8519 |
| :--- | :--- |
| 8 | 1.4074 |
| 9 | 1.2222 |
| 10 | 1.0494 |
| 11 | 1.0370 |
| 12 | 1.0000 |

## factor

$$
\begin{aligned}
& 4.0000 \\
& 2.0000 \\
& 1.3333 \\
& 1.0000
\end{aligned}
$$

$$
1.0000
$$

1
The number of available rotation months for a given estimate is the sum of the number of rotations available for each month of the estimate.

Table 8. Standard Errors of Estimated Numbers of Households, Families or Unrelated Persons (Numbers in Thousands)

| Size of Estimate | Standard <br> Error | Size of Estimate | Standard <br> Error |
| :---: | :---: | :---: | :---: |
| 200 | 35 | 15,000 | 275 |
| 300 | 43 | 25,000 | 331 |
| 500 | 55 | 30,000 | 349 |
| 750 | 67 | 40,000 | 368 |
| 1,000 | 77 | 50,000 | 369 |
| 2,000 | 109 | 60,000 | 351 |
| 3,000 | 132 | 70,000 | 312 |
| 5,000 | 169 | 80,000 | 242 |
| 7,500 | 204 | 90,000 | 78 |
| 10,000 | 232 |  |  |

1
To account for sample attrition, multiply the standard error of the estimate by 1.04 for estimates which include data from wave 5 and beyond.

Table 9. Standard Errors of Estimated Numbers of Persons (Numbers in Thousands)

| Size of Estimate | Standard <br> Error | Size of Estimate | Standard <br> Error |
| :---: | :---: | :---: | :---: |
| 200 | 60 | 50,000 | 835 |
| 300 | 73 | 80,000 | 964 |
| 600 | 103 | 100,000 | 1005 |
| 1,000 | 133 | 130,000 | 1004 |
| 2,000 | 188 | 135,000 | 999 |
| 5,000 | 295 | 150,000 | 966 |
| 8,000 | 371 | 160,000 | 934 |
| 11,000 | 432 | 180,000 | 838 |
| 13,000 | 467 | 200,000 | 688 |
| 15,000 | 499 | 210,000 | 578 |
| 17,000 | 529 | 220,000 | 425 |
| 22,000 | 595 | 230,000 | 108 |
| 26,000 | 641 |  |  |
| 30,000 | 681 |  |  |

1 To account for sample attrition, multiply the standard error of the estimate by 1.04 for estimates which include data from Wave 5 and beyond.

Table 10. Standard Errors of Estimated Percentages of of Households Families or Unrelated Persons

| Base of Estimated <br> Percentage <br> (Thousands) | Estimated Percentages ${ }^{9}$ |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\leq 1$ or $\geq 99$ | 2 or 98 | 5 or 95 | 10 or 90 | 25 or 75 | 50 |  |
| 300 | 1.73 | 2.43 | 3.79 | 5.20 | 7.50 | 8.70 |  |
| 500 | 1.41 | 1.99 | 3.09 | 4.26 | 6.20 | 7.10 |  |
| 750 | 1.09 | 1.54 | 2.40 | 3.30 | 4.76 | 5.50 |  |
| 1,000 | 0.89 | 1.26 | 1.96 | 2.69 | 3.89 | 4.49 |  |
| 2,000 | 0.77 | 1.09 | 1.69 | 2.33 | 3.37 | 3.89 |  |
| 3,000 | 0.55 | 0.77 | 1.20 | 1.65 | 2.38 | 2.75 |  |
| 5,000 | 0.45 | 0.63 | 0.98 | 1.35 | 1.94 | 2.24 |  |
| 7,500 | 0.35 | 0.49 | 0.76 | 1.04 | 1.51 | 1.74 |  |
| 10,000 | 0.28 | 0.40 | 0.62 | 0.85 | 1.23 | 1.42 |  |
| 15,000 | 0.24 | 0.34 | 0.54 | 0.74 | 1.06 | 1.23 |  |
| 25,000 | 0.20 | 0.28 | 0.44 | 0.60 | 0.87 | 1.00 |  |
| 30,000 | 0.15 | 0.22 | 0.34 | 0.47 | 0.67 | 0.78 |  |
| 40,000 | 0.14 | 0.20 | 0.31 | 0.43 | 0.61 | 0.71 |  |
| 50,000 | 0.12 | 0.17 | 0.27 | 0.37 | 0.53 | 0.61 |  |
| 60,000 | 0.11 | 0.15 | 0.24 | 0.33 | 0.48 | 0.55 |  |
| 80,000 | 0.10 | 0.14 | 0.22 | 0.30 | 0.43 | 0.50 |  |
| 90,000 | 0.09 | 0.12 | 0.19 | 0.26 | 0.38 | 0.43 |  |
|  | 0.08 | 0.11 | 0.18 | 0.25 | 0.35 | 0.41 |  |

To account for sample attrition, multiply the standard error of the estimate by 1.04 for estimates which include data from wave 5 and beyond.

Table 11. Standard Errors of Estimated Percentages of Persons

| Base of Estimated Percentage (Thousands) | Estimated Percentages |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\leq 1$ or $\geq 99$ | 2 or 98 | 5 or 95 | 10 or 90 | 25 or. 75 | 50 |
| 200 | 2.97 | 4.17 | 6.50 | 9.00 | 12.90 | 14.90 |
| 300 | 2.42 | 3.41 | 5.31 | 7.30 | 10.50 | 12.20. |
| 600 | 1.71 | 2.41 | 3.75 | 5.20 | 7.50 | 8.60 |
| 1,000 | 1.33 | 1.87 | 2.91 | 4.00 | 5.80 | 6.70 |
| 2,000 | 0.94 | 1.32 | 2.06 | 2.83 | 4.08 | 4.71 |
| 5,000 | 0.59 | 0.83 | 1.30 | 1.79 | 2.58 | 2.98 |
| 8,000 | 0.47 | 0.66 | 1.03 | 1.41 | 2.04 | 2.36 |
| 11,000 | 0.40 | 0.56 | 0.88 | 1.21 | 1.74 | 2.01 |
| 13,000 | 0.37 | 0.52 | 0.81 | 1.11 | 1.60 | 1.85 |
| 17,000 | 0.32 | 0.45 | 0.70 | 0.97 | 1.40 | 1.62 |
| 22,000 | 0.28 | 0.40 | 0.62 | 0.85 | 1.23 | 1.42 |
| 26,000 | 0.26 | 0.37 | 0.57 | 0.78 | 1.13 | 1.31 |
| 30,000 | 0.24 | 0.34 | 0.53 | 0.73 | 1.05 | 1.22 |
| 50,000 | 0.19 | 0.26 | 0.41 | 0.57 | 0.82 | 0.94 |
| 80,000 | 0.15 | 0.21 | 0.32 | 0.45 | 0.65 | 0.75 |
| 100,000 | 0.13 | 0.19 | 0.29 | 0.40 | 0.58 | 0.67 |
| 130,000 | 0.12 | 0.16 | 0.25 | 0.35 | 0.51 | 0.58 |
| 220,000 | 0.09 | 0.13 | 0.20 | 0.27 | 0.39 | 0.45 |
| 230,000 | 0.09 | 0.12 | 0.19 | 0.26 | 0.38 | 0.44 |

To account for sample attrition, multiply the standard error of the estimate by 1.04 for estimates which include data from Wave 5 and beyond.

Table 12. 1990 Topical Module Generalized Variance Parameters

|  | a | b |
| :--- | :---: | :---: |
| Fertility |  |  |
| \# Females (16+) | -0.0000403 | 3,982 |
| Total | -0.0000526 | 4,414 |
| White | -0.0002431 | 2,878 |
| Black | -0.0006864 | 4,851 |
| Hispanic |  |  |
| Births (16+ females) | -0.0000735 | 7,261 |
| Total | -0.0000960 | 8,048 |
| Wbite | -0.0004432 | 5,248 |
| Black | -0.0012518 | 8,847 |

Educational Attainment (16+)
Wave 2

| Total | -0.0000286 | 5,424 |
| :--- | :--- | :--- |
| White | -0.0000372 | 6,012 |
| Black | -0.0001810 | 3,921 |
| Hispanic | -0.0002797 | 3,921 |
| ave 5 |  |  |
| Total | -0.0000312 | 5,913 |
| White | -0.0000405 | 6,553 |
| Black | -0.0001972 | 4,273 |
| Hispanic | -0.0003048 | 4,273 |

Marital Status and Person's
Family Characteristics
Some HH members (16+)

| Total | -0.0000433 | 8,209 |
| :--- | :--- | :--- |
| White | -0.0000563 | 9,098 |
| Black | -0.0002738 | 5,933 |
| Hispanic | -0.0004232 | 5,933 |

All HH members ( $0+$ )

| Total | -0.0000405 | 9,975 |
| :--- | :---: | :---: |
| White | -0.0000534 | 11,055 |
| Black | -0.0002374 | 7,209 |
| Hispanic | -0.0003478 | 7,209 |

```
Child Support (16+ females)
```

    Wave 3
    Total
White
Black
Hispanic
Wave 6
Total
White
Black
Hispanic

Support for non-household
members (16+)
Wave 3
Total
White
Black
Hispanic
Wave 6
Total
White
Black
Hispanic

Health and Disability (0+)

| Total | -0.0000318 | 7,818 |
| :--- | :--- | :--- |
| White | -0.0000419 | 8,666 |
| Black | -0.0001861 | 5,651 |
| Hispanic | -0.0002727 | 5,651 |

0-15 Child Care
Wave 3
Total
White
Black
Hispanic
Wave 6
Total
White
Black
Hispanic

| -0.0000612 | 6,043 |
| :--- | :--- |
| -0.0000799 | 6,698 |
| -0.0003698 | 4,368 |
| -0.0006180 | 4,368 |
| -0.0000667 | 6,587 |
| -0.0000871 | 7,301 |
| -0.0004021 | 4,761 |
| -0.0006736 | 4,761 |


| -0.0000319 | 6,043 |
| :--- | :--- |
| -0.0000414 | 6,698 |
| -0.0002016 | 4,368 |
| -0.0003116 | 4,368 |

$-0.0000347 \quad 6,587$
-0.0000452 7,301
-0.0002198 4,761
-0.0003396 4,761

$$
\begin{array}{ll}
-0.0000318 & 7,818 \\
-0.0000419 & 8,666 \\
-0.0001861 & 5,651 \\
-0.0002727 & 5,651
\end{array}
$$

a
b
Welfare History and AFDC Both Sexes 18+

## Total

White
Black
Hispanic
Males 18+
Total
White
Black
Hispanic
Females 18+
Total
White
Black
Hispanic
$-0.0000783$
14,344
$-0.0001016 \quad 15,898$
$-0.0005025 \quad 10,367$
$-0.0007784 \quad 10,367$
$-0.0001638 \quad 14,344$
$-0.0002112 \quad 15,898$
$-0.0011083 \quad 10,367$
$-0.0015697 \quad 10,367$
-0.0001501
14,344
$-0.0001959 \quad 15,898$
$-0.0009194 \quad 10,367$
$-0.0015441 \quad 10,367$

|  | Totot | $\begin{aligned} & \text { under } \\ & \$ 300 \end{aligned}$ | $\$ 300$ <br> to <br> $\$ 599$ | $\begin{aligned} & \$ 600 \\ & \text { to } \\ & \$ 899 \\ & \hline \end{aligned}$ | $\begin{aligned} & \$ 900 \\ & \text { to } \\ & \$ 1,199 \\ & \hline \end{aligned}$ | $\begin{aligned} & \$ 1,200 \\ & \text { to } \\ & \$ 1,499 \\ & \hline \end{aligned}$ | $\begin{aligned} & \$ 1,500 \\ & \text { to } \\ & \$ 1,999 \\ & \hline \end{aligned}$ | $\begin{aligned} & \$ 2,000 \\ & \text { to } \\ & \$ 2,499 \\ & \hline \end{aligned}$ | $\begin{aligned} & \$ 2,500 \\ & \text { to } \\ & \$ 2,999 \end{aligned}$ | $\begin{aligned} & \$ 3,000 \\ & \text { to } \\ & \$ 3,499 \\ & \hline \end{aligned}$ | $\begin{aligned} & \$ 3,500 \\ & \text { to } \\ & \$ 3,999 \\ & \hline \end{aligned}$ | $\begin{aligned} & \$ 4,000 \\ & \text { to } \\ & \$ 4,999 \end{aligned}$ | $\begin{aligned} & \$ 5,000 \\ & \text { to } \\ & \$ 5,999 \end{aligned}$ | \$6,000 and over |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Thousands in interval | 39,851 | 1371 | 1651 | 2259 | 2734 | 3452 | 6278 | 5799 | 4730 | 3723 | 2519 | 2619 | 1223 | 1493 |
| Percent with at least as much as lower bound of interval | -- | 100.0 | 96.6 | 92.4 | 86.7 | 79.9 | 71.2 | 55.5 | 40.9 | 29.1 | 19.7 | 13.4 | 6.8 | 3.7 |

Factors to be Applied to Base farameters to Obtain Combined Panel Parameters for Estimates from Various Reference Periods.

| \# of avaialble |  |
| :--- | :--- |
| rotation months |  |
| for 2 panels combined ${ }^{2}$ |  |
| Monthly Estimate |  |
| 2 |  |
| 3 |  |
| 4 | 4.0000 |
| 5 | 3.0000 |
| 6 | 2.0000 |
| 7 | 1.6667 |
| 8 | 1.3333 |
|  | 1.1667 |
| factor |  |
| Quarterly Estimates | 1.0000 |
| 12 |  |
| 15 | 1.8519 |
| 18 | 1.5631 |
| 19 | 1.1470 |
| 24 | 1.0000 |

Annual Estimates
1.0000

96

Estimates are based on monthly averages.
2
The number of available rotation months for a given estimate is the sum of the number of rotations available for each month of the estimate for the two panels. There must be at least one rotation month available for each month from each panel for monthly and quarterly estimates.

## APPENDIX A-1

## Income Source Code List

## Code Income Sources

1 - Social Security
2 - U.S. Government Railroad Retirement pay
3 - Federal Supplemental Security Income (SSI)
5 - State unemployment compensation
6 - Supplemental Unemployment Benefits
7 - Other unemployment compensation (Trade Adjustment Act benefits, strike pay, other)
8 - Veterans compensation or pensions
10 - Worker's compensation
12 - Employer or union temporary sickness policy
13 - Payments from a sickness, accident or disability insurance policy purchased on your own
20 - Ald to Families with Dependent Children (AFDC, ADC)
21 - General assistance or General relief
23 - Foster child care payments
24. Other welfare
25 - WIC (Women, Infants and Children) Nutrition Program
27 - Food stamps
28 - Child support payments
29 - Alimony payments
30 - Pension from company or union
31 - Federal Civil Service or other Federal civilian employee pensions
32 - U.S. Military retirement pay
34 - State government pensions
35 - Local government pensions
36 - Income from paid-up life insurance policies or annuities
37 - Estates and trusts
38 - Other payments for retirement, disability or survivor
40 - G.I. Bill/VEAP education benefits
41 - Other VA educational assistance
50 - Income assistance from a charitable group
51 - Money from relatives or friends
52 - Lump sum payments
53 - Income from roomers or boarders
54 - National Guard or Reserve pay
55 - Incidental or casual earnings
56 - Other cash income not included elsewhere
75 - Categories combined and recoded for confidentiality reasons
State Administered Supplemental Security Income (old code 4)
Black lung payments (old code 9)
State temporary sickness or disability benefits (old code 11)
Indian, Cuban, or Refugee Assistance (old code 22)
National Guard or Reserve Force retirement (old code 33)

## Code Asset List

100 - Regular/passbook savings accounts in a bank, savings and loan or credit union
101 - Money market deposit accounts
102 - Certificates of Deposit or other savings certificates
103 - NOW, Super NOW or other interest earning checking accounts
104 - Money market funds
105 - U.S. Government securities
106 - Municipal or corporate bonds
107 - Other interest-earning assets
110 - Stocks or mutual fund shares
120 - Rental property
130 - Mortgages
140 - Royalties
150-Other financial investments

## Code Special Indicators

170 - Worked
171 - Disabled
172 - Medicare
173 - Medicaid
174 - U.S. Saving Bonds (E, EE)
175 - College Work Study
176 - PELL Grant
177 - Supplemental Educational Opportunity Grant (SEOG)
178 - National Direct Student Loan (NSL)
179 - Guaranteed Student Loan
180- JTPA Training
181 - Employer assistance
182 - Fellowship/Scholarship
183-Other financial aid
200 - VA disability rating of 100\%
201 - VA disibility of less than 100\%

## APPENDIX A-2

## Income Sources Included in Monthly Cash Income

## Earnings from Employment

## Wages and salaries

Nonfarm self-employment income
Farm self-employment income

## Income from Assets (Property Income)

Regular/passbook savings accounts in a bank, savings and loan or credit union
Money market deposit accounts
Certificates of Deposit or other savings certificates
NOW, Super NOW or other interest-earning checking accounts
Money market funds
U.S. Government securities

Municipal or corporate bonds
Other interest-earning assets
Stocks or mutual fund shares
Rental property
Mortgages
Royalties
Other financial investments

## Other Income Sources

Social Security
U.S. Government Railroad Retirement pay

Federal Supplemental Security Income (SSI)
State Administered Supplemental Security Income
State unemployment compensation
Supplemental Unemployment Benefits
Other unemployment compensation (Trade Adjustment Act benefits, strike pay, other)
Veterans compensation or pensions
Black lung payments
Worker's compensation
State temporary sickness or disability benefits
Payments from a sickness, accident or disability insurance policy purchased on your own
Aid to Families with Dependent Children (AFDC, ADC)
General Assistance or General Relief
Indian, Cuban, or Refugee Assistance
Foster child care payments
Other welfare
Child support payments
Alimony payments
Pension from company or union
Federal Civil Service or other Federal civilian employee pensions
U.S. Military retirement pay

National Guard or Reserve Forces retirement
State government pensions
Local government pensions
Income from paid-up life insurance policies or annuities
Estates and trusts

Other payments for retirement, disability or survivor benefits
G.I. Bill/VEAP education benefits

Income assistance from a charitable group
Money from relatives or friends
Lump sum payments
Income from roomers or boarders
National Guard or Reserve pay
Incidental or casual earnings
Other cash income not included elsewhere

## APPENDIX A-3

## Sources of Means-Tested Benefits Covered in SIPP

## Cash Benefits

Federal Supplemental Security Income (SSI)
State Administered Supplemental Security Income
Veterans' pensions
Aid to Families with Dependent Children (AFDC, ADC)
General Assistance or General Relief
Indian, Cuban, or Refugee Assistance
Other welfare
Foster child care payments
Noncash Benefits
Food Stamps
Special Supplemental Food Program for Women, Infants, and Children (WIC)
Low-Income Home Energy Assistance
Medicaid
Free or reduced price school lunches
Free or reduced price school breakfasts
Public or subsidized rental housing

## APPENDIX A-4

## 1980 Census of Population Occupation Classification System

(The numbers in parentheses refer to the 1980 Standard Occupational Classification code equivalents. Pt means part. N.e.c. means not elsewhere classified.)

1980
Code

Engineers, Architects, and Surveyors
Architects (161)
Engineers
Aerospace (1622)
Metallurgical and materials (1623)
Mining (1624)
Peiroleum (1625)
Chemical (1626)

## Nüclear (1627)

Civil (1628)
Agricultural (1632)
Electrical and electronic $(1633,1636)$
Industrial (1634)
Mechanical (1635)

Marine and naval architects (1637)
Engineers, n.e.c. (1639)
Surveyors and mapping scientists (164)
Mathematical and Computer Scientists
Computer systems analysts and scientists (171)
Operations and systems researchers and analysts (172)
Actuaries (1732)
Statisticians (1733)
Mathematical scientists, n.e.c. (1739)
Natural Scientists
Physicists and astronomers $(1842,1843)$
Chemists, except biochemists (1845)
Atmospheric and space scientists (1846)
Geologists and geodesists (1847)
Physical scientists, n.e.c. (1849)
Agricultural and food scientists (1853)
Biological and life scientists (1854)
Forestry and conservation scientists (1852)
Medical scientists (1855)
Health Diagnosing Occupations
Physicians (261)
Dentists (262)
Veterinarians (27)
Optometrists (281)
Podiatrists (283)
Health diagnosing practitioners, n.e.c. (289)
Health Assessment and Treating Occupations
Registered nurses (29)
Pharmacists (301)
Dietitians (302)
Therapists
Inhalation therapists (3031)
Occupational therapists (3032)
Physical therapists (3033)
Speech therapists (3034)
Therapists, n.e.c. (3039)
Physicians' assistants (304)
Teachers, Postsecondary
Earth, environmental, and marine science teachers (2212)
Biological science teachers (2213)
Chemistry teachers (2214)
Physics teachers (2215)
Natural science teachers, n.e.c. (2216)
Psychology teachers (2217)
Economics teachers (2218)
History teachers (2222)
Political science teachers (2223)
Sociology teachers (2224)
Social science teachers, n.e.c. (2225)
Engineering teachers (2226)
Mathematical science teachers (2227)
Computer science teachers (2228)
Medical science teachers (2231)
Health specialties teachers (2232)
Business, commerce, and marketing teachers (2233)
Agriculture and forestry teachers (2234)

Art, drama, and music teachers (2235)
Physical education teachers (2236)
Education teachers (2237)
English teachers (2238)
Foreign language teachers (2242)
Law teachers (2243)

- Social work teachers (2244)

Theology teachers (2245)
Trade and industrial teachers (2246)
Home economics teachers (2247)
Teachers, postsecondary, n.e.c. (2249)
Postsecondary teachers, subject not specified
Teachers, Except Postsecondary
Teachers, prekindergarten and kindergarten (231)
Teachers, elementary school (232)
Teachers, secondary school (233)
Teachers, special education (235)
Teachers, n.e.c. $(236,239)$
Counselors, educational and vocational (24)
Librarians, Archivists, and Curators
Librarians (251)
Archivists and curators (252)
Social Scientists and Urban Planners
Economists (1912)
Psychologists (1915)
Sociologists (1916)
Social scientists, n.e.c. $(1913,1914,1919)$
Urban planners (192)
Social, Recreation, and Religious Workers
Social workers (2032)
Recreation workers (2033) -
Clergy (2042)
Religious workers, n.e.c. (2049)
Lawyers and Judges
Lawyers (211)
Judges (212)
Writers, Artists, Entertainers, and Athletes
Authors (321)
Techinical writers (398)
Designers (322)
Musicians and composers (323)
Actors and directors (324)
Painters, scuiptors, craft-artists, and artist printmakers (325)
Photographers (326)
Dancers (327)
Artists, performers, and related workers, n.e.c. $(328,329)$
Editors and reporters (331)
Public relations specialists (332)
Announcers (333)
Athletes (34)

TECHNICAL, SALES, AND ADMINISTRATIVE SUPPORT OCCUPATIONS

## Technicians and Related Support Occupations

Health Technologists and Technicians
Clinical laboratory technologists and technicians (362)
Dental hygienists (363)
Health record technologists and technicians (364)
Radiologic technicians (365)
Licensed practical nurses (366)
Health technologists and technicians, n.e.c. (369)
Technologists and Technicians, Except Health
Engineering and Related Technologists and Technicians
Electrical and electronic technicians (3711)
Industrial engineering technicians (3712)
Mechanical engineering technicians (3713)
Engineering technicians, n.e.c. (3719)
Drafting occupations (372)
Surveying and mapping technicians (373)
Science Technicians
Biological technicians (382)
Chemical technicians (3831)
Science technicians, n.e.c. $(3832,3833,384,389)$
Technicians; Except Health, Engineering, and Science
Airplane pilots and navigators (825)
Air traffic controllers (392)
Broadcast equipment operators (393)
Computer programmers $(3971,3972)$
Tool programmers, numerical control (3974)
Legal assistants (396)
Technicians, n.e.c. (399)

## Sales Occupations

Supervisors and proprietors, sales occupations (40)
Sales Representatives, Finance and Business Services
Insurance sales occupations (4122)
Real estate sales occupations (4123)
Securities and financial services sales occupations (4124).
Advertising and related sales occupations (4153)
Sales occupations, other business services (4152)
Sales Representatives, Commodities Except Retail Sales engineers (421)
Sales representatives, mining, manufacturing, and wholesale $(423,424)$
Sales Workers, Retail and Personal Services
Sales workers, motor vehicles and boats $(4342,4344)$
Sales workers, apparel (4346)
Sales workers, shoes (4351)
Sales workers, furniture and home furnishings (4348)
Sales workers; radio, TV, hi-fi, and appliances ( 4343,4352 )
Sales workers, hardware and building supplies (4353)
Sales workers, parts (4367)
Sales workers, other commodities (4345, 4347, 4354, 4356, 4359,4362, 4369)
Sales counter clerks (4363)
Cashiers (4364)
Street and door-to-door sales workers (4366)

News vendors (4365)
Sales Related Occupations
Demonstrators, promoters and models, sales (445)
Auctioneers (447)
Sales support occupations, n.e.c. $(444,446,449)$

## Administrative Support Occupations, Including Clerical

Supervisors, Administrative Support Occupations
Supervisors, general office ( $4511,4513,4514,4516,4519,4529$ )
Supervisors, computer equipment operators (4512)
Supervisors, financial records processing (4521)
Chief communications operators (4523)
Supervisors; distribution, scheduling, and adjusting clerks (4522, 4524-4528)
Computer Equipment Operators
Computer operators (4612)
Peripheral equipment operators (4613)
Secretaries, Stenographers, and Typists
Secretaries (4622)
Stenographers (4623)
Typists (4624)
Information Clerks
Interviewers (4642)
Hotel clerks (4643)
Transportation ticket and reservation agents (4644)
Receptionists (4645)
Information clerks, n.e.c. (4649)
Records Processing Occupations, Except Financial
Classified-ad clerks (4662)
Correspondence clerks (4663)
Order clerks (4664)
Personnel clerks, except payroll and timekeeping (4692)
Library clerks (4694)
File clerks (4696)
Records clerks (4699)
Financial Records Processing Occupations
Bookkeepers, accounting, and auditing clerks (4712)
Payroll and timekeeping clerks (4713)
Billing clerks (4715)
Cost and rate clerks (4716)
Billing, posting, and calculating machine operators (4718)
Duplicating, Mail and Other Office Machine Operators
Duplicating machine operators (4722)
Mail preparing and paper handling machine operators (4723)
Office machine operators, n.e.c. (4729)
Communications Equipment Operators
Telephone operators (4732)
Telegraphers (4733)
Communications equipment operators, n.e.c. (4739)
Mail and Message Distributing Occupations
Postal clerks, exc. mail carriers (4742)
Mail carriers, postal service (4743)
Mail clerks, exc. postal service (4744)
Messengers (4745)
Material Recording, Scheduling, and Distributing Clerks
Dispatchers (4751)

Production coordinators (4752)
Traffic, shipping, and receiving clerks (4753)
Stock and inventory clerks (4754)
Meter readers (4755)
Weighers, measurers, and checkers (4756)
Samplers (4757)
Expediters (4758)
Material recording, scheduling, and distributing clerks, n.e.c. (4759)
Adjusters and Investigators
Insurance adjusters, examiners, and investigators (4782)
Investigators and adjusters, except insurance (4783)
Eligibility clerks, social welfare (4784)
Bill and account collectors (4786)
Miscellaneous Administrative Support Occupations
General office clerks (463)
Bank tellers (4791)
Proofreaders (4792)
Data-entry keyers (4793)
Statistical clerks (4794)
Teachers' aides (4795)
Administrative support occupations, n.e.c. $(4787,4799)$

## SERVICE OCCUPATIONS

## Private Household Occupations

Launderers and ironers (503)
Cooks, private household (504)
Housekeepers and butlers (505)
Child care workers, private household (506)
Private household cleaners and servants $(502,507,509)$

## Protective Service Occupations

Supervisors, Protective Service Occupations
Supervisors, firefighting and fire prevention occupations (5111)
Supervisors, police and detectives (5112)
Supervisors, guards (5113)
Firefighting and Fire Prevention Occupations
Fire inspection and fire prevention occupations (5122)
Firefighting occupations (5123)
Police and Detectives
Police and detectives, public service (5132)
Sheriffs bailiffs, and other law enforcement officers (5134)
Correctional institution officers (5133)
Guards
Crossing guards (5142)
Guards and police, exc. public service (5144)
Protective service occupations, n.e.c. (5149)
Service Occupations, Except Protective and Household
Food Preparation and Service Occupations
Supervisors, food preparation and service occupations (5211)
Bartenders (5212)
Waiters and waitresses (5213)

| 436 | Cooks, except short order (5214) |
| :---: | :---: |
| 437 | Short-order cooks (5215) |
| 438 | Food counter, fountain and related occupations (5216) |
| 439 | Kitchen workers, food preparation (5217) |
| 443 | Waiters'/waitresses' assistants (5218) |
| 444 | Miscellaneous food preparation occupations (5219) |
|  | Health Service Occupations |
| 445 | Dental assistants (5232) |
| 446 | Health aides, except nursing (5233) |
| 447 | Nursing aides, orderlies, and attendants (5236) |
|  | Cleaning and Building Service Occupations, except Household |
| 448 | Supervisors, cleaning and building service workers (5241) |
| 449 | Maids and housemen ( 5242,5249 ) |
| V(453) | Janitors and cleaners (5244) |
| 454 | Elevator operators (5245) |
| 455 | Pest control occupations (5246) |
|  | Personal Service Occupations |
| 456 | Supervisors, personal service occupations (5251) |
| 457 | Barbers (5252) |
| 458 | Hairdressers and cosmetologists (5253) |
| 459 | Attendants, amusement and recreation facilities (5254) |
| 463 | Guides (5255) |
| 464 | Ushers (5256) |
| 465 | Public transportation attendants (5257) |
| 466 | Baggage porters and bellhops (5262) |
| 467 | Welfare service aides (5263) |
| 468 | Child care workers, except private household (5264) |
| 469 | Personal service occupations, n.e.c. $(5258,5269)$ |
|  | FARMING, FORESTRY, AND FISHING OCCUPATIONS |
|  | Farm Operators and Managers |
| W(473) | Farmers, except horticultural (5512-5514) |
| 474 | Horticultural specialty farmers (5515) |
| 475 | Managers, farms, except horticultural (5522-5524) |
| 476 | Managers, horticultural specialty farms (5525) |
|  | Other Agricultural and Related Occupations |
|  | Farm Occupations, Except Managerial |
| 477 | Supervisors, farm workers (5611) |
| 479 | Farm workers (5612-5617) |
| 483 | Marine life cultivation workers (5618) |
| 484 | Nursery workers (5619) |
|  | Related Agricultural Occupations |
| 485 | Supervisors, related agricultural occupations (5621) |
| 486 | Groundskeepers and gardeners, except farm (5622) |
| 487 | Animal caretakers, except farm (5624) |
| 488 | Graders and sorters, agricultural products (5625) |
| 489 | Inspectors, agricultural products (5627) |

Supervisors, forestry, and logging workers (571)
Forestry workers, except logging (572)
Timber cutting and logging occupations (573, 579)
Fishers, Hunters, and Trappers
Captains and other officers, fishing vessels (pt 8241)
Fishers (583)
Hunters and trappers (584)

## PRECISION PRODUCTION, CRAFT, AND REPAIR OCCUPATIONS

## Mechanics and Repairers

Supervisors, mechanics and repairers (60)
Mechanics and Repairers, Except Supervisors
Vehicle and Mobile Equipment Mechanics and Repairers
Automobile mechanics (pt 6111)
Automobile mechanic apprentices (pt 6111)
Bus, truck, and stationary engine mechanics (6112)
Aircraft engine mechanics (6113)
Small engine repairers (6114)
Automobile body and related repairers (6115)
Aircraft mechanics, exc. engine (6116)
Heavy equipment mechanics (6117)
Farm equipment mechanics (6118)
Industrial machinery repairers (613)
Machinery maintenance occupations (614)
Electrical and Electronic Equipment Repairers
Electronic repairers, communications and industrial equipment $(6151,6153,6155)$
Data processing equipment repairers (6154)
Household appliance and power tool repairers (6156)
Telephone line installers and repairers (6157)
Telephone installers and repairers (6158)
Miscellaneous electrical and electronic equipment repairers $(6152,6159)$
Heating, air conditioning, and refrigeration mechanics (6161)
Miscellaneous Mechanics and Repairers
Camera, watch, and musical instrument repairers $(6171,6172)$
Locksmiths and safe repairers (6173)
Office machine repairers (6174)
Mechanical controls and valve repairers (6175)
Elevator installers and repairers (6176)
Millwrights (6178)
Specified mechanics and repairers, n.e.c. $(6177,6179)$
Not specified mechanics and repairers

## Construction Trades

Supervisors, construction occupations
Supervisors; brickmasons, stonemasons, and tile setters (6312)
Supervisors, carpenters and related workers (6313)
Supervisors, electricians and power transmission installers (6314)
Supervisors; painters, paperhangers, and plasterers (6315)
Supervisors; plumbers, pipefitters, and steamfitters (6316)

## 616

## 617



634
635

## 636

644
645

## 646





Supervisors, n.e.c. (6311, 6318)
Construction Trades, Except Supervisors
Brickmasons and stonemasons (pt 6412, pt 6413)
Brickmason and stonemason apprentices (pt 6412, pt 6413)
Tile setters, hard and soft (6414, pt 6462)
Carpet installers (pt 6462)
Carpenters (pt 6422)
Carpenter apprentices (pt 6422)
Drywall installers (6424)
Electricians (pt 6432)
Electrician apprentices (pt 6432)
Electrical power installers and repairers (6433)
Painters, construction and maintenance (6442)
Paperhangers (6443)
Plasterers (6444)
Plumbers, pipefitters, and steamfitters (pt 645)
Plumber, pipefitter, and steamfitter apprentices (pt 645)
Concrete and terrazzo finishers (6463)
Glaziers (6464)
Insulation workers (6465)
Paving, surfacing, and tamping equipment operators (6466)
Roofers (6468)
Sheetmetal duct installers (6472)
Structural metal workers (6473)
Drillers, earth (6474)
Construction trades, n.e.c. $(6467,6475,6476,6479)$
Extractive Occupations
Supervisors, extractive occupations (632)
Drillers, oil well (652)
Explosives workers (653)
Mining machine operators (654)
Mining occupations, n.e.c. (656)
Precision Production Occupations
Supervisors, production occupations $(67,71)$
Precision Metal Working Occupations
Tool and die makers (pt 6811)
Tool and die maker apprentices (pt 6811)
Precision assemblers, metal (6812)
Machinists (pt 6813).
Machinist apprentices (pt 6813)
Boilermakers (6814)
Precision grinders, filers, and tool sharpeners (6816)
Patternmakers and model makers, metal (6817)
Lay-out workers (6821)
Precious stones and metals workers (Jewelers) $(6822,6866)$
Engravers, metal (6823)
Sheet metal workers (pt 6824)
Sheet metal worker apprentices (pt 6824)
Miscellaneous precision metal workers (6829)
Precision Woodworking Occupations
Patternmakers and model makers, wood (6831)
Cabinet makers and bench carpenters (6832)
Furniture and wood finishers (6835)
Miscellaneous precision woodworkers (6839)
Precision Textile, Apparel, and Furnishings Machine Workers
Dressmakers (pt 6852, pt 7752)

| 667 | Tailors (pt 6852) |
| :---: | :---: |
| 668 | Upholsterers (6853) |
| 669 | Shoe repairers (6854) |
| 673 | Apparel and fabric patternmakers (6856) |
| 674 | Miscellaneous precision apparel and fabric workers (6859, pt 7752) |
|  | Precision Workers, Assorted Materials |
| 675 | Hand molders and shapers, except jewelers (6861) |
| 676 | Patternmakers, lay-out workers, and cutters (6862) |
| 677 | Optical goods workers (6864, pt 7477, pt 7677) |
| 678 | Dental laboratory and medical appliance technicians (6865) |
| 679 | Bookbinders (6844) |
| 683 | Electrical and electronic equipment assemblers (6867) |
| 684 | Miscellaneous precision workers, n.e.c. (6869) |
|  | Precision Food Production Occupations |
| 686 | Butchers and meat cutters (6871) |
| 687 | Bakers (6872) |
| 688 | Food batchmakers (6873, 6879) |
|  | Precision Inspectors, Testers, and Related Workers |
| 689 | Inspectors, testers, and graders $(6881,828)$ |
| 693 | Adjusters and calibrators (6882) |
|  | Plant and System Operators |
| 694 | Water and sewage treatment plant operators (691) |
| 695 | Power plant operators (pt 693) |
| 696 | Stationary engineers (pt 693, 7668) |
| 699 | Miscellaneous plant and system operators (692, 694, 695, 696) |
|  | OPERATORS, FABRICATORS, AND LABORERS |
|  | Machine Operators, Assemblers, and Inspectors |
|  | Machine Operators and Tenders, except Precision |
|  | Metal working and Plastic Working Machine Operators |
| 703 | Lathe and turning machine set-up operators (7312) |
| 704 | Lathe and turning machine operators (7512) |
| 705 | Milling and planing machine operators ( 7313,7513 ) |
| 706 | Punching and stamping press machine operators ( $7314,7317,7514,7517$ ) |
| 707 | Rolling machine operators ( 7316,7516 ) |
| 708 | Drilling and boring machine operators ( 7318,7518 ) |
| 709 | Grinding, abrading, buffing, and polishing machine operators ( $7322,7324,7522$ ) |
| 713 | Forging machine operators ( 7319,7519 ) |
| 714 | Numerical control machine operators (7326) |
| 715 | Miscellaneous metal, plastic, stone, and glass working machine operators (7329, 7529) |
| 717 | Fabricating machine operators, n.e.c. ( 7339,7539 ) |
|  | Metal and Plastic Processing Machine Operators |
| 719 | Molding and casting machine operators (7315, 7342, 7515, 7542) |
| 723 | Metal plating machine operators ( 7343,7543 ) |
| 724 | Heat treating equipment operators ( 7344,7544 ) |
| 725 | Miscellaneous metal and plastic processing machine operators (7349, 7549) |
|  | Woodworking Machine Operators |
| 726 | Wood lathe, routing, and planing machine operators (7431, 7432, 7631, 7632) |
| 727 | Sawing machine operators ( 7433,7633 ) |
| 728 | Shaping and joining machine operators ( 7435,7635 ) |
| 729 | Nailing and tacking machine operators (7636) |
| 733 | Miscellaneous woodworking machine operators (7434, 7439, 7634, 7639) |


Tailors (pt 6852)
Upholsterers (6853)
Shoe repairers (6854)
Apparel and fabric patternmakers (6856)
Miscellaneous precision apparel and fabric workers (6859, pt 7752)
Precision Workers, Assorted Materials
Hand molders and shapers, except jewelers (6861)
Patternmakers, lay-out workers, and cutters (6862)
Optical goods workers (6864, pt 7477, pt 7677)
Dental laboratory and medical appliance technicians (6865)
Bookbinders (6844)
Electrical and electronic equipment assemblers (6867)
Miscellaneous precision workers, n.e.c. (6869)
Precision Food Production Occupations
Butchers and meat cutters (6871)
Bakers (6872)
Food batchmakers $(6873,6879)$
Precision Inspectors, Testers, and Related Workers
Inspectors, testers, and graders $(6881,828)$
Adjusters and calibrators (6882)
Plant and System Operators
Water and sewage treatment plant operators (691)
Power plant operators (pt 693)
Stationary engineers (pt 693, 7668)
Miscellaneous plant and system operators (692, 694, 695, 696)
OPERATORS, FABRICATORS, AND LABORERS
Machine Operators, Assemblers, and Inspectors
Machine Operators and Tenders, except Precision
Metal working and Plastic Working Machine Operators
Lathe and turning machine set-up operators (7312)
Milling and planing machine operators $(7313,7513)$
Punching and stamping press machine operators ( $7314,7317,7514,7517$ )
Rolling machine operators $(7316,7516)$
Drilling and boring machine operators $(7318,7518)$
Grinding, abrading, buffing, and polishing machine operators ( $7322,7324,7522$ )
Forging machine operators $(7319,7519)$
Numerical control machine operators (7326)
Miscellaneous metal, plastic, stone, and glass working machine operators $(7329,7529)$
Fabricating machine operators, n.e.c. $(7339,7539)$
Molding and casting machine operators $(7315,7342,7515,7542)$
Metal plating machine operators $(7343,7543)$
Heat treating equipment operators $(7344,7544)$
Miscellaneous metal and plastic processing machine operators $(7349,7549)$
Woodworking Machine Operators
Wood lathe, routing, and planing machine operators ( $7431,7432,7631,7632$ )
Sawing machine operators $(7433,7633)$
Shaping and joining machine operators $(7435,7635)$
Nailing and tacking machine operators (7636)
Miscellaneous woodworking machine operators (7434, 7439, 7634, 7639)

Printing Machine Operators
Printing machine operators (7443, 7643)
Photoengravers and lithographers $(6842,7444,7644)$
Typesetters and compositors (6841, 7642)
Miscellaneous printing machine operators (6849, 7449, 7649)
Textile, Apparel, and Furnishings Machine Operators
Winding and twisting machine operators $(7451,7651)$
Knitting, looping, taping, and weaving machine operators $(7452,7652)$
Textile cutting machine operators (7654)
Textile sewing machine operators (7655)
Shoe machine operators (7656)
Pressing machine operators (7657)
Laundering and dry cleaning machine operators (6855, 7658)
Miscellaneous textile machine operators $(7459,7659)$
Machine Operators, Assorted Materials
Cementing and gluing machine operators (7661)
Packaging and filling machine operators $(7462,7662)$
Extruding and forming machine operators $(7463,7663)$
Mixing and blending machine operators (7664)
Separating, filtering, and clarifying machine operators $(7476,7666,7676)$
Compressing and compacting machine operators $(7467,7667)$
Painting and paint spraying machine operators (7669)
Roasting and baking machine operators, food $(7472,7672)$
Washing, cleaning, and pickling machine operators (7673)
Folding machine operators $(7474,7674)$
Furnace, kiln, and oven operators, exc. food (7675)
Crushing and grinding machine operators (pt 7477, pt 7677)
Slicing and cutting machine operators $(7478,7678)$
Motion picture projectionists (pt 7479)
Photographic process machine operators (6863, 6868, 7671)
Miscellaneous machine operators, n.e.c. (pt 7479, 7665, 7679)
Machine operators, not specified
Fabricators, Assemblers, and Hand Working Occupations
Welders and cutters ( $7332,7532,7714$ )
Solderers and brazeps $(7333,7533,7717)$
Assemblers $(772,774)$
Hand cutting and trimming occupations (7753)
Hand molding, casting, and forming occupations (7754, 7755)
Hand painting, coating, and decorating occupations (7756)
Hand engraving and printing occupations (7757)
Hand grinding and polishing occupations (7758)
Miscellaneous hand working occupations (7759)
Production Inspectors, Testers, Samplers, and Weighers
Production inspectors, checkers, and examiners $(782,787)$
Production testers (783)
Production samplers and weighers (784)
Graders and sorters, exc. agricultural (785)
Transportation and Material Moving Occupations
Motor Vehicle Operators
Supervisors, motor vehicle operators (8111)
Truck drivers, heavy $(8212,8213)$
Truck drivers, light (8214)
Driver-sales workers (8218)
Bus drivers (8215)

809

## 856

Taxicab drivers and chauffeurs (8216)
Parking lot attendants (874)
Motor transportation occupations, n.e.c. (8219)
Transportation Occupations, Except Motor Vehicles
Rail Transportation Occupations
Railroad conductors and yardmasters (8113)
Locomotive operating occupations (8232)
Railroad brake, signal, and switch operators (8233)
Rail vehicle operators, n.e.c. (8239)
Water Transportation Occupations
Ship captains and mates, except fishing boats (pt 8241, 8242)
Sailors and deckhands (8243)
Marine engineers (8244)
Bridge, lock, and lighthouse tenders (8245)
Material Moving Equipment Operators
Supervisors, material moving equipment operators (812)
Operating engineers (8312)
Longshore equipment operators (8313)
Hoist and winch operators (8314)
Crane and tower operators (8315)
Excavating and loading machine operators (8316)
Grader, dozer, and scraper operators (8317)
Industrial truck and tractor equipment operators (8318)
Miscellaneous material moving equipment operators (8319)
Handlers, Equipment Cleaners, Helpers, and Laborers
Supervisors, handlers, equipment cleaners, and laborers, n.e.c. (85)
Helpers, mechanics and repairers (863)
Helpers, Construction and Extractive Occupations
Helpers, construction trades (8641-8645, 8648)
Helpers, surveyor (8646)
Helpers, extractive occupations (865)
Construction laborers (871)
Production helpers $(861,862)$
Freight, Stock, and Material Handlers
Garbage collectors (8722)
Stevedores (8723)
Stock handlers and baggers (8724)
Machine feeders and offbearers (8725)
Freight, stock, and material handlers, n.e.c. (8726)
Garage and service station related occupations (873)
Vehicle washers and equipment cleaners (875)
Hand packers and packagers (8761)
Laborers, except construction (8769)
Member of the Armed Forces

## APPENDIX A-5

1980 Census of Population Industry Classification System
(Alphabets parentheses are the 1972 SIC code equivalents 1)
Census
Code
AGRICULTURE, FORESTRY, AND FISHERIES
010 (A) Agricultural production, crops (01)
011 Agricultural production, livestock (02)
020 Agricultural services, except horticultural (07, except 078)
021 Horticultural services (078)
030 Forestry (08)
031 Fishing, hunting, and trapping (09)
MINING

040 Metal mining (10)
041 Coal mining (11, 12)
042 Crude petroleum and natural gas extraction (13)
050 Nonmetallic mining and quarrying, except fuel (14)
060 (B) CONSTRUCTION $(15,16,17)$

## MANUFACTURING

## Nondurable Goods

Food and kindred products
Meat products (201)

100
101
102
110
111
112
120
121
122

Dairy products (202)
Canned and preserved fruits and vegetables (203)
Grain mill products (204)
Bakery products (205)
Sugar and confectionery products (206)
Beverage industries (208)
Miscellaneous food preparations and kindred products $(207,209)$
Not specified food industries
Tobacco manufactures (21)
Textile mill products
Knitting mills (225)
Dyeing and finishing textiles, except wool and knit goods (226)
Floor coverings, except hard surface (227)
Yarn, thread, and fabric mills (221-224, 228)
Miscellaneous textile mill products (229)

[^1]Apparel and other finished textile products
Apparel and accessories, except knit (231-238)
Miscellaneous fabricated textile products (239)
Paper and allied products
Pulp, paper, and paperboard mills (261-263, 266)
Miscellaneous paper and pulp products (264)
Paperboard containers and boxes (265)
Printing, publishing, and allied industries
Newspaper publishing and printing (271)
Printing, publishing, and allied industries, except newspapers (272-279)
Chemicals and allied products
Plastics, synthetics, and resins (282)
Drugs (283)
Soaps and cosmetics (284)
Paints, varnishes, and related products (287)
Agricultural chemicals (287)
Industrial and miscellaneous chemicals (281, 286, 289)
Petroleum and coal products
Petroleum refining (291)
Miscellaneous petroleum and coal products $(295,299)$
Rubber and miscellaneous plastics products
Tires and inner tubes (301)
Other rubber products, and plastics footwear and belting (302-304, 306)
Miscellaneous plastics products (307)
Leather and leather products
Leather tanning and finishing (311)
Footwear, except rubber and plastic $(313,314)$
Leather products, except footwear (315-317, 319)
Durable Goods
Lumber and wood products, except furniture
Logging (241)
Sawmills, planing mills, and millwork $(242,243)$
Wood buildings and mobile homes (245)
Miscellaneous wood products $(244,249)$
Furniture and fixtures (25)
Stone, clay, glass, and concrete products
Glass and glass products (321-323)
Cement, concrete, gypsum, and plaster products $(324,327)$
Structural clay products (325)
Pottery and related products (326)
Miscellaneous nonmetallic mineral and stone products $(328,329)$.
Metal industries
Blast furnaces, steelworks, rolling and finishing mills (331)
Iron and steel foundries (332)
Primary aluminum industries (3334, part 334, 3353-3355, 3361)
Other primary metal industries (3331-3333, 3339, part 334, 3351, 3356, 3357, 3362, 3369, 339)
Cutlery, handtools, and other hardware (342)
Fabricated structural metal products (344)
Screw machine products (345)
Metal forgings and stampings (346)
Ordnance (348)

Miscellaneous fabricated metal products (341, 343, 347, 349)
Not specified metal industries
Machinery, except electrical
Engines and turbines (351)
Farm machinery and equipment (352)
Construction and material handling machines (353)
Metalworking machinery (354)
Office and accounting machines (357, except 3573)
Electronic computing equipment (3573)
Machinery, except electrical, n.e.c. $(355,356,358,359)$
Not specified machinery
Electrical machinery, equipment, and supplies
Household appliances (363)
Radio, T.V., and communication equipment $(365,366)$
Electrical machinery, equipment, and supplies, n.e.c. (361, 362, 364, 367, 369)
Not specified electrical machinery, equipment, and supplies
Transportation equipment
Motor vehicles and motor vehicle equipment (371)
Aircraft and parts (372)
Ship and boat building and repairing (373)
Railroad locomotives and equipment (374)
Guided missiles, space vehicles, and parts (376)
Cycles and miscellaneous transportation equipment $(375,379)$
Professional and photographic equipment, and watches
Scientific and controlling instruments $(381,382)$
Optical and health services supplies $(383,384,385)$
Photographic equipment and supplies (386)
Watches, clocks, and clockwork operated devices (387)
Not specified professional equipment
Toys, amusement, and sporting goods (394)
Miscellaneous manufacturing industries (39 exc. 394)
Not specified manufacturing industries
TRANSPORTATION, COMMUNICATIONS, AND OTHER PUBLIC UTILITIES

Transportation
Railroads (40)
Bus service and urban transit (41, except 412)
Taxicab service (412)
Trucking service $(421,423)$
Warehousing and storage (422)
U.S. Postal Service (43)

Water transportation (44)
Air transportation (45)
Pipe lines, except natural gas (46)
Services incidental to transportation (47)
Communications
Radio and television broadcasting (483)
Telephone (wire and radio) (481)
Telegraph and miscellaneous communication services $(482,489)$
Utilities and sanitary services
Electric light and power (491)502

600 Miscellaneous general merchandise stores (539)
601 (E) Grocery stores (541)
602 Dairy products stores (545)
610 Retail bakeries (546)
611 Food stores, n.e.c. (542. 543, 544, 549)
612 Motor vehicle dealers $(551,552)$
620 Auto and home supply stores (553)
621 Gasoline service stations (554)
622 Miscellaneous vehicle dealers (555, 556, 557, 559)
630 Apparel and accessory stores, except shoe (56, except 566)
631 Shoe stores (566)

632 Furniture and home furnishings stores (571)
640 Household appliances, TV, and radio stores $(572,573)$
641 (F) Eating and drinking places (58)
642 Drug stores (591)
650 Liquor stores (592)
651 Sporting goods, bicycles, and hobby stores $(5941,5945,5946)$
652 Book and stationery stores $(5942,5943)$
660 Jewelry stores (5944)
661 Sewing, needlework and piece goods stores (5949)
662 Mail order houses (5961)
670 Vending machine operators (5962)
671 Direct selling establishments 1 establishments (5963)
672 Fuel and ice dealers (598)
681 Retail florists (5992)
682 Miscellaneous retail stores (593, 5947, 5948, 5993, 5994, 5999)
691 Not specified retail trade
FINANCE, INSURANCE, AND REAL ESTATE
700 (G) Banking (60)
701 Savings and loan associations (612)
702 Credit agencies, n.e.c. (61, except 612)
710 Security, commodity brokerage, and investment companies $(62,67)$
711 (H) Insurance (63, 64)
712 Real estate, including real estate-insurance-law offices $(65,66)$

## BUSINESS AND REPAIR SERVICES

721 Advertising (731)
722 Services to dwellings and other buildings (734)
730 Commercial research, development, and testing labs $(7391,7397)$
731 Personnel supply services (736)
732 Business management and consulting services (7392)
740 Computer and data processing services (737)
741 Detective and protective services (7393)
742 Business services, n.e.c. (732, 733, 735, 7394, 7395, 7396, 7399)
$750 \quad$ Automotive services, except repair (751, 752, 754)
751 Automotive repair shops (753)
752 Electrical repair shops $(762,7694)$
760 Miscellaneous repair services (763, 764, 7692, 7699)
PERSONAL SERVICES
761 (J) Private households (88)
762 Hotels and motels (701)
770 Lodging places, except hotels and motels (702, 703, 704)
771 Laundry, cleaning, and garment services (721)
772 Beauty shops (723)
780 Barber shops (724)
781 Funeral service and crematories (726)
782 Shoe repair shops (725)
$790 \quad$ Dressmaking shops (part 729)

831 (K) Hospitals (806)
832 Nursing and personal care facilities (805)
840 Health services, n.e.c. $(807,808,809)$
841 Legal services (81).
842 (L) Elementary and secondary schools (821)
850 (M) Colleges and universities (822)
851 Business, trade, and vocational schools (824)
852 Libraries (823)
860 Educational services, n.e.c. (829)
861 Job training and vocational rehabilitation services (833)
862 Child day care services (835)
870 Residential care facillies, without nursing (836)
871 Social services, n.e.c. $(832,839)$
872 Museums, art galleries, and zoos (84)
880 Religious organizations (866)
881 Membership organizations (861-865, 869)
882 Engineering, architectural, and surveying services (891)
890 Accounting, auditing, and bookkeeping services (893)
891 Noncommercial educational and scientific research (892)
892 Miscellaneous professional and related services (899)

## PUBLIC ADMINISTRATION

900 Executive and legislative offices (911-913)
901 General government, n.e.c. (919)
910 Justice, public order, and safety (92)
921 Public finance, taxation, and monetary policy (93)
922 Administration of human resources programs (94)
930 Administration of environmental quality and housing programs (95)
931 Administration of economic programs (96)
932 National security and international affairs (97)
991 Member of the Armed Forces



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OMB No. 0607-0670: Approval Expires 09/30/92


\begin{tabular}{|c|c|c|c|}
\hline \multicolumn{4}{|c|}{Section 5 - TOPICAL MODULES} \\
\hline \multicolumn{4}{|c|}{Part A - ANNUAL INCOME AND RETIREMENT ACCOUNTS} \\
\hline \multicolumn{4}{|l|}{of the situation of persons and familles during calendar yoar 1991. It would be very holpful to refor to records during this part of the interviow.} \\
\hline CHECK ITEM T1 \& Are the names of any businesses listed for . . . on the control card? (cc item 43) \& \begin{tabular}{ll}
8000 \& \(1 \square \mathrm{Yes}-\) SKIP to 1 b \\
\(2 \square \mathrm{No}\)
\end{tabular} \& \\
\hline \begin{tabular}{l}
CHECK \\
ITEM T2
\end{tabular} \& Was an interview obtained for . . . for each of the 4th, 5 th, 6 th, and 7 th waves (cc Iterns 44, 45, 46, and 47)? \& \[
\begin{array}{ll}
8002 \\
\& 1 \square \text { Yes - SKIP to Stateme } \\
2 \square \text { No }
\end{array}
\] \& D, page 57 \\
\hline \multicolumn{2}{|l|}{\begin{tabular}{l}
1 a. Did . . . own and operate a business at any time during calondar year \(1991 ?\) \\
Include farms.
\end{tabular}} \& \[
\begin{array}{ll}
1 \square 004 \text { Yes } \\
\& 2 \square \text { No - SKIP to Stateme }
\end{array}
\] \& \[
\text { page } 57
\] \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{\begin{tabular}{l}
ASK OR VERIFY - \\
b. How many difforent butinesses did . . . own and operate during calendar year \(1991 ?\) \\
ASK OR VERIFY - \\
C. What were the names of the businceasea that . . . owned and operated during calondar yoar 19917 (List up to 2 businesses; list according to net income from business beginning with the business providing the largest net income.)
\end{tabular}}} \&  \& it page 57 \\
\hline \& \&  \&  \\
\hline CHECK ITEMT3 \& \begin{tabular}{l}
Transcribe ID number for this business from the controi card (cc item 43). \\
(Fill items T3-T9 for the first business listed, then fill items T3-T9 if a second business is listed.)
\end{tabular} \&  \& Business ID No. OR

Not listed on control card <br>
\hline CHECK ITEN T4 \& Has information about this business already been obtained in an interview for another household member? \& $80121 \square$ Yes

$$
2 \square \text { No }- \text { SKIP to } 2 s
$$ \& \[

$$
\begin{array}{ll}
8062 \square \text { Yes } \\
& 2 \square \text { No - SKIP to } 2 a
\end{array}
$$
\] <br>

\hline  \& | NTATIVE INSTRUCTION: |
| :--- |
| me, person number, and ID number of the other owner viousiy reported the business te the location of the ion about this business. | \&  \&  <br>


\hline  \& | VERIFY - |
| :--- |
| the form of this |
| appractice) - was ht a sole orship, a partnerahip, or a ton? | \& \[

$$
\begin{array}{ll}
18018 & 1 \text { Sole proprietorship } \\
& 2 \square \text { Partnership } \\
& 3 \square \text { Corporation } \\
& \times 1 \square D K
\end{array}
$$

\] \& | 8088 | $1 \square$ Sole proprietorship |
| :--- | :--- |
|  | $2 \square$ Partnership |
|  | $3 \square$ Corporation |
|  | $1 \square D K$ | <br>


\hline  \& is buainces primarily in . . .'s own home or here aise? \&  \& $807 \square$| $1 \square$ Own home |
| :--- |
| $2 \square$ Somewhere else | <br>

\hline
\end{tabular}





| Section 5 - TOPICAL MODULES (Continued) |  |
| :---: | :---: |
| Pert A - ANNUAL INCOME AND RETIREMENT ACCOUNTS (Continuod) |  |
| 4l. How much did . . . withdraw from Koogh accounts during 1991? | 9360 $\square$ . . <br> $\times 1 \square \mathrm{DK}$ <br> $\times 2 \square$ Ref. |
| M. Including ALL Kcogh cocounts in . . $\mathrm{O}^{\prime}=$ OWN name, how much did .. is Keogh accounts cem during $1991 ?$ | 9368 $\square$ $\$$ $\square$ . <br> $\times 1 \square D K$ $x_{2} \square$ Ref. |
| n. What types of aseets did . . . have in . . .'s Keogh accounta during 1991? <br> Mark (X) all that apply. <br> Anything else? |  <br> $9384 \times \mathrm{DOK}$ |
| CHECK ITEM T11 $\quad \begin{aligned} & \text { Refer to cc item } 42 . \\ & \\ & \end{aligned}$ for ... on the control card? | ${ }^{9385}$, $\square$ Yes <br> ${ }_{2} \square$ No - SKIP to Check /tem T12 |
| 40. During 1991, did .. . pertctipett in an employee thitt plem nuch ees 1401 ikplant Such a pion ellows employcos 20 defer part of thelr salery mend nor have to pay uxas on their dothrod | $\left.\begin{array}{l} \text { S38] } \square \text { Yes } \\ \text { 2■No } \\ \times 1 \square \mathrm{DK} \end{array}\right\} \text { SKIP to Check Item } T 12$ |
| P. How much did . . . contributs to this plan during $1991 ?$ |  |
| NOTES |  |



| Section 5 - TOPICAL MODULES (Continued) |  |  |
| :---: | :---: | :---: |
| CHECK Prert - TAXE8 (Continued) |  |  |
| CHECK <br> ITEMT1a | Refor to item 1b. <br> Does the respondent have a copy of . . .'s Federal income tax form or a workstheat to refer to? | $\begin{array}{ll}\text { 9428. } \square \text { Yes } \\ & \\ \\ \\ \text { No - SKIP to 9a }\end{array}$ |
| CHECK ITEMTT | Refer to item 4. <br> Is "Form 1040" marked? | 9830  <br>  ${ }^{1} \square$ Yes <br>  ${ }_{2} \square \mathrm{No}-$ SKIP to 80 |
| CHECK ITEM T16 | is "Schedule A, itemized Deductions" marked "Yes" in item $5(1)$ ? | $\begin{array}{ll} 9432 & 1 \square \text { Yes } \\ & 2 \square \mathrm{No}-\text { SKIP to } 6 b \end{array}$ |
| 6a. How much were . . .'s (and . . .'s huabend's/wife's) Itemized deductions for 1991 ? <br> (Scheotule A, line 26) |  |  |
| b. On.. thueb | s Form 1040, did . . . lend . . .'s d/wiffel cletmi - | (Ask for each credit claimed.) <br> 6c. What was the emount of the (Read name of credit) claimed? |
| (1) | wild and deppendent eare axpense credit. m 1040, line 41) | 9497 $\square$ Yes <br> $2 \square \mathrm{No}$ |
| (2) A (Fo | edit for the elderty or the diseabled . . . 1040, line 42) |  |
| CHECK <br> ITEM T17 | Refor to item 5(2). <br> is "Schodule D, Capital Gains and Losses " marked "Yes' '? | $\begin{array}{ll} 1 \square \text { Yes } \\ & \square \square \text { No - SKIP to 8a } \end{array}$ |
| 7. How much were . . .'s (and . . .'s huaband'g/wife's) oupltal galns or loages from the sale or exchange of personal ascets for 1991 ? <br> (Form 1040, line 13) |  |  |
|  |  |  |
| b. Federa coterm minus <br> (Form (Form (Form | Income tar Mability ta the tocal tax as ned by the tax tatole or schedule pluse or cortain edfugtinenta. What wes . . .'s (and chend'a/wife's) net tax lieblity in 19917 <br> 040, line 53) <br> 040A, line 27) <br> O40EZ, line 7) |  |
| CHECK ITEM T18 | Refer to item 8a. <br> What is the amount of adjusted gross income reported? | $\square$ \$ 21,250 or more - SKIP to Check Item T19 <br> $2 \square$ $\square$ Less than \$21,250 |




| Section 5 - TOPICAL MODUEES (Continued) |  |  |
| :---: | :---: | :---: |
| Part C - 8CHOOL ENROLLMENT AND FINANCING (Continued) |  |  |
| 5a. Please look at card DD in your pamphles and tell me if . . . received any of these types of edveational essistance during the past 12 months? <br> Anyohing elee? | $\begin{array}{r} 9626 \times 3 \square \text { None - } \\ \text { SKIP to } \\ \text { Check Item } \\ \text { C1 } \end{array}$ | 5b. How much did . . . recelve? |
| (1) The Bat Br | $\text { \$628, } \square \text { Received }$ | 9630 <br> \$ <br> $\times 1$ $\square$ DK |
| (2) Other Veteranse' Educational Aesiatance Programe? (Imelude survivore and dependenta, vocational rehabilitation and poat-Vietnam veterans' aseletance. | $\square$ Received | 9634 <br> \$ $\times 1 \square$ DK |
| (3) College Work Study Program? | $\square$ $\square$ Received |  |
| (4) A Pell Grent? | $\square$ Received | 9642 <br> \$ $x_{1}$ $\square$ DK |
| (8) A Supplonnental Educetional Opportunity Grant (SEOG)Z. . . . . . . . . | Received | 9648 <br> \$ xIワDK |
| (6) A National Direct Student Loen (NDSL (or Perkins Laan)? | 9648 , DReceived | 9850 <br> \$ |
|  |  | $\times 1 \square 0 K$ |
| (7) A gumarteed atudent loan, such as al Pmrent Loen for Undergraduate Students (PLUS), Stafiord Loent or Supplemental Lome for Students (SLS)? | Received | 9654 <br> \$ <br> xiロDK |
| (8) A dTPA Training Program? | 9856, $\square$ Received | 9858 <br> $\$$ <br> $\times 1$ $\square$ DK |
| (9) Employer asalatance | $\square$ Received | 9882 <br> \$ <br> ${ }^{1} 1$ $\square$ DK |
| (10) A fellowahip or scholarship? . . . . . . . . | Received | 9886 <br> \$ <br> $\times 1$ $\square$ DK |
| (11) A tuition reduction? | $\square$ Received | 9870 <br> \$ <br> $\times 1$ DK |
| (12) Anything eise fother than assistance frem relatives and friendsl? . . . . . . . . . | $\square$ Received | 9874 <br> \$ <br> $\times \square \square$ |
| NOTES |  |  |




| -INCOME LIST |  |  |  |
| :---: | :---: | :---: | :---: |
| Code | - Type . . | Code | Type |
| $\begin{array}{r} 1 \\ 2 \\ 3 \\ 4 \\ 6 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 10 \\ 11 \\ 12 \\ 13 \\ 20 \\ 21 \\ 22 \\ 23 \\ 24 \\ 26 \\ 27 \end{array}$ | Social Security <br> U.S. Government Railroad Retirement pay <br> Federal Supplamental Security Income (SSi) <br> Stete Supplementai Security Income <br> (State administered SSI onfy) <br> State unemployment compensation <br> Supplementel Unemployment Benefits <br> Other unemployment compensation (Trade Adjustment Act benefits, strike pay, other) <br> Veterans' compensation or pensions <br> Black lung payments <br> Workers' compensation <br> State temporary sicieness or disability benefits <br> Employer or union temporary sickneas policy <br> Payments from a sickness, accident or disability insurance policy purchased on your own <br> Aid to Families with Dependent Children (AFDC, ADC) <br> General assistance or General relief <br> Indian, Cuban, of Refugee Assistance <br> Foster child care payments <br> Other welfare <br> WIC (Women, Infants and Children Nutrition Program) <br> Food stamps |  | Child support payments <br> Alimony payments <br> Pension from company or union <br> Federal Civil Service or other Federal civilian employee pensions <br> U.S. Military retirement pay <br> National Guard or Reserve Forces retirement <br> State govemment pensions <br> Local government pensions <br> Income from paid-up life insurance policies or annuities <br> Estates and trusts <br> Other payments for retirement, disability or survivor <br> G.I. Bill <br> Other VA educational assistance <br> Income assistance from a charitable group <br> Money from relatives or friends <br> Lump sum payments <br> Income from roomers or boarders <br> National Guard or Reserve pay <br> Incidental or casual earnings <br> Other cash income not included elsewhere |
|  | ASSET LIST |  | SPECIAL INDICATORS |
| Code | Type | Code | Type |
| 100 101 102 103 104 105 106 107 110 120 130 140 180 | Regular/passbook savings accounts in a bank, savings and loan or credit union <br> Money market deposit accounts <br> Certificates of Deposit or other savings certificates <br> Interest-earning checking accounts (such as NOW or Super NOW accounts) <br> Money market funds <br> U.S. Government securities <br> Municipal or corporate bonds <br> Other interest-aerning assets <br> Stocks or mutual fund shares <br> Rental property <br> Mertgages <br> Royalties <br> Other financial investments | 170 171 172 173 174 175 178 177 178 179 180 181 182 183 200 201 | Worked <br> Disabled <br> Medicare <br> Medicaid <br> U.S. Savings Bonds (E, EE) <br> College work study <br> PELL Grant <br> Supplemental Educational Opportunity Grant (SEOG) <br> National Direct Student Loan (NDSL) <br> Guaranteed Student Loan <br> JTPA Training <br> Employer assistance <br> Feilowship/Scholarship <br> Other financial aid <br> VA disability rating of $100 \%$ <br> VA disability of less than 100\% |



## APPENDIX C

## Working Papers

This appendix provides a list of a SIPP Working Papers. Any of these papers are free of charge. See the order form on page C-9.

## 1990

9001 - "Recent Developments in the Survey of Income and Program Participation", Census Bureau
9002 - "An Analysis of Leaving Home Using Data From the 1984 Panel of the SIPP", by Alden Speare, Roger Avery, Frances Goldscheider, Brown University

9003 - "The Effect of the Marriage Market on First Marriages: Evidence From SIPP", John Fitzgerald, Bowdoin College

9004 - "Counting Spells of Unemployment", Paul Ryscavage and Kathleen Short, Census Bureau
9005 - "The Elderly and Their Sources of Income: Implications for Rural Development", Robert Hoppe, Economic Research Service, U.S. Department of Agriculture

9006 - "Alternative Estimates of Economic Well-Being by Age Using Data on Wealth and Income, Daniel Radner, Social Security Administration

9007 - "Longitudinal Analysis of Federal Survey Data", Patricia Ruggles, Joint Economic Committee
9008 - "Measurement Errors in SIPP Program Reports", Kent H. Marquis and Jeffrey C. Moore, Census Bureau
9009 - "Handling Single Wave Nonresponse in Panel Survey," R. Singh, V. Huggins, and D. Kasprzyk, Census Bureau

9010 - "Nonresponse Research for SIPP," R. Petroni, Census Bureau
9011 - "The Seam Effect in Panel Surveys," G. Kalton, D. Hill, and M. Miller, University of Michigan
9012 - "The Effects of Being Uninsured on Health Care Service Use: Estimates from the SIPP," S. Long and J. Rodgers, Congressional Budget Office

9013 - "Wage Differential and Job Changes," S. Seninger and D. Greenberg, University of Maryland
9014 - "Wages and Employment Among the Working Poor: New Evidence From SIPP," S. Long and A. Martini, The Urban Institute and Mathematica Policy Research

9015 - "Pension Portability \& Labor Mobility: Evidence from SIPP," A . Gustman and T. Steinmeier, Dartmouth College and Texas Tech University

9016 - "Response \& Procedural Error Variance in Surveys: An Application of Poisson and Newman Type A Regression," D. Hill, University of Toledo

9017 - "Aging and the Income Value of Housing Wealth," S.F. Venti and D.A. Wise, Darmouth College and Harvard University

9018 - "Welfare Participation and Welfare Recidivism: The Role of Family Events," S.K. Long, The Urban Institute

9019 - "Racial Differences in Health and Health Care Service Utilization: The Effect of Socioeconomic Status," J.E. Mutchler and J.A. Burr, State University of New York at Buffalo

9020 - "Living Benefits: Closing the Gap for LTC Financing," D.G. Shea, Pennsylvania State University
9021 - "SIPP Record Check Results: Implications for Measurement Principles and Practice," K.H. Marquis and J.C. Moore, Census Bureau

9022 - "Workers with Disabilities in Large and Small Firms: Profiles from the SIPP," D. Drury, Berkeley Planning Associates

9023 - "Entry into Marriage and the Transition to Adulthood Among Recent Firth Cohorts of Young Adults in the United States and the Federal Republic of Germany," J. Witte, Havvard University

9024 - "The Saving Effect of Tax-Deferred Retirement Accounts: Evidence from the SIPP," S. Venti and D.A. Wise, Dartmouth College and Harvard University

9025 - "Children and Welfare: Patterns of Multiple Program Participations," S.K. Long, The Urban Institute
9026 - "Household and Nonhousehold Living Arrangements in Later Life: A Longitudinal Analysis of A Social Process," J.E. Mutchler and J.A. Burr, University of Buffalo

9027 - "The SIPP Event History Calendar: Aiding Respondents in the Dating of Longitudinal Process," R. Kominski, Census Bureau

9028 - "Estimates of Employer Contributions for Health Insurance by Worker Characteristics," S. Haber, George Washington University

9029 - "Two Notes on Relating the Risk of Disclosure for Microdata and Geographic Area Size," B. Greenberg and L. Voshell, Census Bureau

9030 - "Childcare Effects on Social Security Benefits (91 ARC)," H.M. Iams, Social Security Administration
9031 - "The Effect of the Medicaid Program on Welfare Participation \& Labor Supply," R. Moffit and B. Wolfe, Brown University and University of Wisconsin

9032 - "Proxy Reports: Results from a Record Check Study," J.C. Moore, Census Bureau
9033 - "Spells Without Health Insurance: What Affects Spell Durations and Who are the Chronically Uninsured?," T. McBride and K. Swartz, The Urban Institute

9034 - "Spells Without Health Insurance: Distributions of Durations and their Link to Point-in-Time Estimates of the Uninsuired," K. Swartz and T. McBride, The Urban Institute

9035 - "Discrete Time Models of Entry into Marriage Based on Retrospective Marital Histories of Young Adults in the U.S. and the Federal Republic of Germany, ' J. Witte, Harvard University

## 1989

8901 - "Quality of SIPP Estimates," R. P. Singh, L. Weidman, and G. Shapiro, Census Bureau
8902 - "Two Notes on Sampling Variance Estimates from the 1984 SIPP Public-Use Files." by B. Bye and S. J. Gallicchio, Social Security Administration

8903 - "Longitudinal vs. Retrospective Measures of Work Experience," P. Ryscavage and J. Coder, Census Bureau

8904 - "Analyzing the Characteristics of Blacks: A Comparison of Data from SIPP and CPS," R. Farley and L. J. Neidert, University of Michigan

8905 - "Enhanced Demographic-Economic Data Sets," R. Herriot, C. Bowie, D. Kasprzyk, and S. Haber, Census Bureau

8906 - - "Reflections on the Income Estimates from the Initial Panel of The Survey of Income and Program Participation (SIPP)," D. Vaughan, Social Security Administration

8907 - "Measuring Spells of Unemployment and Their Outcomes," P. Ryscavage, Census Bureau
8908 - "Welfare Dependency and its Causes: Determinants of the Duration of Welfare Spells," P. Ruggles, The Urban Institute

8909 - "Measuring the Duration of Poverty Spells," P. Ruggles, The Urban Institute and R. Williams, Congressional Budget Office

8910 - "Methods of Processing Unit Data Longitudinally on the SIPP," K. Smith, Congressional Budget Office
8911 - "Composite Estimation for SIPP Annual Estimates," R. P. Chakrabarty, Census Bureau
8912 - "Research and Evaluation Conducted on the Survey of Income and Program Participation," R. Petroni, T. Carmody, and V. Huggins, Census Bureau

8913 - "A Poisson Model of Response and Procedural Error Analysis of SIPP Reinterview Data," D. Hill, University of Michigan

8914 - "The Economic Resources of the Edlerly," S. Crystal and D. Shea, Rutgers University
8915 - "Multivariate Analysis by Users of SIPP Micro-Data Files," R. P. Chakrabarty, Census Bureau
8916 - "A Resource-Based Model of Living Arrangements Among the Unmarried Elderly," J. E. Mutchler and J. A. Burr, University of Buffalo

8917 - "Measuring Household Change at The individual Level Using Data From SIPP," A. Speare, Jr. and R. Avery, Brown University

8918 - "The Effect of Child Care Costs on Married Women's Labor Force participation," R. Connelly, Bowdoin College

8919 - "Income and Assets of Social Security Beneficiaries by Type of Benefit," S. Grad, Social Security Administration

8920 - "Development and Evaluation of a Survey-Based Type of Benefit Classification for the Social Security Program," D. Vaughan, Social Security Administration

8921 - "Wave Seam Effects in the SIPP," N. Young, The Urban Institute
8922 - "Components of Longitudinal Household Change for 1984-1985: An Evaluation of National Estimates from the SIPP," by Donald J. Hernandez, Bureau of the Census

8923 - "Database Design for Large-Scale Complex Data," by Martin H. David and Alice Robbin, University of Wisconsin-Madison

8924 - "Measuring the Frequency and Consequences of Job Separations: Data from the Survey of Income and Program Participation," by John M. McNeil and Enrique J. Lamas, Bureau of the Census

8925 - "The Regular Receipt of Child Support: A Multi-step Process," by James L. Peterson and Christine Winquist Nord, Child Trends, Inc.

8801 - "The Impact of the Unit of Analysis on Measures of Serial Multiple Program Participation," by P. Doyle and S. E. Long, Mathematica Policy Research, Inc.

8802 - "Short-Term Fluctuations in Income and Their Impacts on the Characteristics of the Low-Income Population: New Data From the Survey of Income and Program Participation," by P. Ruggles, Urban Institute

8803 - "Residential Mobility of One-Person Households," by J. Witte and H. Lahmann, German Institute for Economic Research

8804 - "Year-Apart Estimates of Household Net Worth From the Survey of Income and Program Participation," by John M. McNeil and Enrique J. Lamas, Bureau of the Census

8805 - "Measuring Poverty and Crises: A Comparison of Annual and Subannual Accounting Program Participation," by Martin David and John Fitzgerald, Institute for Research on Poverty

8806-"Using Administrative Record Data to Evaluate the Quality of Survey Estimates," by Jeffrey C. Moore and Kent H . Marquis, Bureau of the Census

8807 - "The Wealth of the Aged and Nonaged, 1984," by Daniel B. Radner, HHS
8808 - "Examining the Dynamics of Health Insurance Loss: A Tale of Two Cohorts," by Alan C. Monheit and Claudia L. Schur, NCHSR

8809 - "The Dynamics of Medicaid Enrollment," by Pam Farley Short, Joel C. Cantor, and Alan C. Monheit, NCHSR
8810 - "The Discouraged Worker Effect: A Reappraisal Using Spell Duration Data," by Alberto Martini, University of Wisconsin-Madison

8811 - "Income as a Proxy for the Economic Status of the Elderly," by Deborah J. Chollet and Robert B. Friedland, Employee Benefit Research Institute

8812 - "The SIPP: Data from the Social Security Administration's 1987 Annual Statistical Supplement"
8813 - "Participation in Industrial Training Programs," by Sheldon Haber, George Washington University
8814 - "A Methodological Study Using Administrative Records: The Special Frames Study of the Income Survey Development Program," by W. J. Logan, Social Security Administration, D. Kasprzyk and R. Cavanaugh, Census Bureau

8815 - "The Effect of Income Taxation on Labor Supply When Deductions are Endogenous," by R. K. Thriest, Johns Hopkins University

8816 - "A Comparison of Gross Change in Labor Force Status From SIPP and CPS," by P. Ryscavage and A. Feldman-Harkins, Census Bureau

8817- "How are the Elderly Housed? New Data from the 1984 Survey of Income and Program Participation," by A. Goldstein, Census Bureau
8818 - "Welfare-Recipiency as Observed in the SIPP," by J. Coder, Census Bureau and P. Ruggles, The Urban Institute
8819 - "Reservation Wages and Subsequent Acceptance Wages of Unemployed Persons," by P. Ryscavage, Census Bureau
8820 - "Selected References From the Income Survey Development Program (ISDP) and Survey of Income and Program Participation (SIPP)"
8821 - "Training, Wage Growth, Firm Size," by S. Haber, The George Washington University and E. Lamas, Census Bureau
8822 - "Defining and Measuring Normetro Poverty: Results From The Survey of Income and Program Participation," by R. Hoppe, USDA-ERS-ARED
8823 - "Nonresponse Adjustment Methods For Demographic Surveys at the U.S. Bureau of the Census," by R. Singh and R. Petroni, Census Bureau
8824 - "Testing Telephone Interviewing in the Survey of Income and Program Participation and Some Early Results," by S. Durant and P. Gbur, Census Bureau
8825 - "Excluding Sample That Misses Some Interviews From SIPP Longitudinal Estimates," by L. Ernst and D. Gillman, Census Bureau
8826 - "The Employment of Mothers and the Prevention of Poverty," by M. Hill, University of Michigan and H. Hartmann, Rutgers University
8827 - "Using Administrative Record Data To Describe SIPP Response Errors," by J. Moore and K. Marquis, Census Bureau
8828 - "A Look at Welfare Dependency Using The 1984 SIPP Panel File," by J. Coder, D. Burkhead, and A. Feldman-Harkins, Census Bureau
8829 - "Census Bureau Microdata: Providing Useful Research Data While Protecting The Anonymity of Respondents," by G. Gates, Census Bureau
8830 - "The Survey of Income and Program Participation: An Overview and Discussion of Research Issues," by D. Kasprzyk, Census Bureau

8701 - "Tracking Persons Over Time," by A. C. Jean and E. K. McArthur, Census Bureau
8702 - "Preliminary Data From the SIPP 1983-84 Longitudinal Research File," by J. F. Coder, D. Burkhead. A. Feldman-Harkins, and J. McNeil, Census Bureau

8703 - "Work Experience Data From SIPP," by P. Ryscavage and A. Feldman-Harkins, Census Bureau
8704 - "The Treatment of Person -Wave Nonresponse in Longitudinal Surveys," by G. Kalton, J. Lepkowski, S. Heeringa, Ting-Kwong Lin, and M. E. Miller, Survey Research Center, University of Michigan

8705 - "SIPP: Filling Data Gaps on the Poverty and Social Welfare Fronts," by P. Ryscavage, Census Bureau
8706 - "Response Errors in Labor Surveys: Comparisons Self and Proxy," by D. Hill University of Michigan

8707 - "Differences Between SIPP and Food and Nutrition Service Program Data on Child Nutrition and WIC Program Participation, by L. Ku and R. Dalrymple, Food and Nutrition Service, U.S. Department of Agriculture

8708- "Quality Profile for the Survey of Income and Program Participation," by K. King, R. Petroni, and R. Singh, Census Bureau

8709 - "Survey of Income and Program Participation SIPP Sample Loss and the Efforts to Reduce It," by D. Nelson, C. Bowie, and A. Walker, Census Bureau

8710 - "The Impact of Imputation Procedures on Distributional Characteristics of the Low Income Population," by P. Doyle, Mathematica Policy Research, Inc., and R. Dalrymple, Food and Nutrition Service, U. S. Department of Agriculture

8711 - "Job Tenure, Lifetime Work Interruptions and Wage Differentials," by J. McNeil, E. Lamas, Census Bureau, and S. Haber, George Washington University

8712- "Measuring the Bias in Gross Flows in the Presence of Auto-Correlated Response Errors," by D. Hubble, Census Bureau, and D. Judkins, Westat, Inc.

8713 - "Investigation of Possible Causes of Transition Patterns from SIPP," by L. Weidman, Census Bureau
8714 - "Households and Income Sources: Monthly Averagesं for 1984," by J. Moorman, Census Bureau
8715 - "Creating SIPP Longitudinal Files Using OSIRIS IV," by M. Servais, University of Michigan
8716 - "Transition In and Out of Poverty: New Data From the Survey of Income and Program Participation," by P. Ruggles, Urban Institute and R. Williams, Congressional Budget Office

8717 - "On their own: The Self-employed and Others in Private Business," by S. Haber, George Washington University, E. Lamas Bureau of the Census, and J. Lichtenstein, U.S. Small Business Administration.

8718 - "Factors Associated With Household Net Worth," by E. Lamas and J. McNeil, Bureau of the Census
8719 - "Exploring Changes in Health Care Coverage Using the SIPP Longitudinal Research File," by D. Burkhead and A. Feldman, Bureau of the Census

8720 - "The Analysis of Geographical Mobility and Life Events with the SIPP," by D. Dahmann and E. McArthur, Bureau of the Census

8721 - "A Review of the Use of Administrative Records in the Survey of Income and Program Participation, by C. Bowie and D. Kasprzyk, Census Bureau

8722 - "Survey of Income and Program Participation Update," by D. Kasprzyk, Bureau of the Census
8723 - "Measuring Poverty with the SIPP and the CPS," by R. Williams, Congressional Budget Office
8724 - "The Statistical Invisible Minority Aged," by C. Taeuber, Bureau of the Census, and E. Attah, Atlanta University
8725 - "An Analysis of the SIPP Asset and Liability Feedback Experiment," by E. Lamas and J. McNeil, Bureau of the Census

8601 - "Some Aspects of SIPP," compiled and edited by R. A. Herriot and D. Kasprzyk, Census Bureau
8602 - "Nonsampling Error Issues in the SIPP," by G. Kalton, University of Michigan, and D. B. McMillen and D. Kasprzyk, Census Bureau

8603-"An Investigation of Model-Based Imputation Procedures Using Data From the Income Survey Development Program," by V. J. Huggins and L. Weidman, Census Bureau

8604 - "Food Stamp Participation: A Comparison of SIPP With Administrative Records," by S. Carison and R. Dalrymple, Food and Nutrition Service

8605 - "SIPP Longitudinal Household Estimation for the Proposed Longitudinal Definition," by L. R. Ernst, Census Bureau

8606-"A Comparison of Seven Imputation Procedures for the 1979 Panel of the Income Survey Development Program," by V. J. Huggins, Census Bureau

8607 - "An Investigation of the Imputation of Monthly Earnings for the Survey of Income and Program Participation Using Regression Models," by V. J. Huggins and L. Weidman, Census Bureau

8608 - "Evaluation of Training Materials and Methods for the Survey of Income and Program Participation," by M. Holt, Survey Research Consultant

8609 - "Patterns of Household Composition and Family Status change," by C. F. Citro, ASA/Census Research Fellow, and H. W. Watts, Department of Economics, Columbia University

8610 - "Composite Estimation for SIPP: A Preliminary Report," by R. P. Chakrabarty, Census Bureau
8611 - "Longitudinal Household Concepts in SIPP: Preliminary Results," by C. F. Citro, ASA/Census Research Fellow, D. J. Hernandez, and R. A. Herriot, Census Bureau

8612 - "Following Children in the Survey of Income and Program Participation," by E. K. McArthur, K. S. Short, and S. Bianchi, Census Bureau

8613 - "SIPP Labor Transitions: Problems and Promises," by P. Ryscavage and K. S. Short, Census Bureau
8614 - "Augmenting Data Reported in the Survey of Income and Program Participation With Administrative Record Data - A Brief Discussion," by D.K. Sater, Census Bureau

1985
8501 - "The Survey of Income and Program Participation: Uses and Application," by K.S. Short, Census Bureau
8502 - "Application of a Matched File Linking the Bureau of the Census Survey of Income and Program and Participation and Economic Data," by S. Haber, George Washington University

8503 - "Using the Survey of Income and Program Participation for Research on the Older Population," by D. B. McMillen, C. M. Taeuber, and J. Marks, Census Bureau

8504 - "Summary of the Content of the 1984 Panel of the Survey of Income and Program Participation," by D. T. Frankel, Census Bureau

8505 - "Enhancing Data From the Survey of Income and Program Participation With Data From Economic Censuses and Surveys," by D. K. Sater, Census Bureau

8506 - "Methodologies for Imputing Longitudinal Survey Items," by V. J. Huggins, L. Weidman, and M. E. Samuhel, Census Bureau

- 8507 - "New Household Survey and the CPS: A Look at Labor Force Differences," by P. M. Ryscavage, Census Bureau, and J. E. Bregger, Bureau of Labor Statistics

1984
8401 - (Update No. 1, Revised 12/85) "An Overview of the Survey of Income and Program Participation," by D. Nelson, D.B. McMillen, and D. Kasprzyk, Census Bureau

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| 8904 | 8911 | 8918 | 8925 |
| 8905 | 8912 | 8919 |  |
| 8906 | 8913 | 8920 |  |
| 8907 | 8914 | 8921 |  |

1990

| 9001 | 9008 | 9015 | 9022 | 9029 |
| :---: | :---: | :---: | :---: | :---: |
| 9002 | 9009 | 9016 | 9023 | 9030 |
| 9003 | 9010 | 9017 | 9024 | 9031 |
| 9004 | 9011 | 9018 | 9025 | 9032 |
| 9005 | 9012 | 9019 | 9026 | 9033 |
| 9006 | 9013 | 9020 | 9027 | 9034 |
| 9007 | 9014 | 9021 | 9028 | 9035 |

## APPENDIX D

## Machine-Readable Data Dictionary Layout

Data dictionary lines are 46 characters. The character on the first position determines the type of lines. Each variable may have the following lines:

1. COMMENTS ("*") lines
2. DATA DICTIONARY (" $D$ ") ; line and DATA DESCRIPTION
3. UNIVERSE (" $U$ ") lines
4. VALUE DESCRIPTION lines
5. One blank line at the end

## FORMAT

"*" LINE COMMENTS
a. "*" in the first position indicates that this is a comment line. This line can appear any place in the dictionary. It will be used for short comments or to nullify any value codes.
b. "**" in the first two positions is also comments but it has additional meaning. It indicates this is a block of comments which will be applied to several variables. The first line of this block will ave the COMMENT NO. so that subsequent variable can refer back to this comment block.
"D"
LINE DATA DICTIONARY
This line contains the following information:

| ID | "D" | COL. | $1-1$ |
| :--- | :--- | :--- | ---: |
| NAME | Variable name | COL. | $3-10$ |
| SIZE | Size of data field | COL. | $14-15$ |
| BEGIN | Begin position of data field | COL. | $19-22$ |
| TYPE | Character variable indicator "CHAR" |  |  |
|  | or blanks if numeric variable | COL. | $26-29$ |
| DEC | Implied decimal places | COL. | $33-34$ |
| IND | TABLE variable indicator "TABLE" with "(aa)" for |  |  |
|  | its dimension; otherwise blanks | COL. | $38-46$ |

Text describing the variable will follow this " $D$ " line. Use COL. 6-46 and repeat as many lines as necessary.
"U" LINE UNIVERSE DEFINITION
This line contains the universe definition. Use COL. 3-46 and repeat as many lines as necessary.

|  | "U" | COL. | $1-1$ |
| :--- | :--- | :--- | :--- |
| DESCRIPTION | Universe description | COL. | $3-46$ |

(For continuation use COL. 3-46 and repeat as many lines as necessary.)
"V" LINE VALUE DEFINITION

|  | "V" | COL. | $1-1$ |
| :--- | :--- | :--- | ---: |
| ID | VaLUE | COL. | $3-12$ |
| DESCRIPTION | $\because . "$ | COL. | 14 |
|  | Value description | COL. | $15-46$ |

(Repeat COL. 14-46 format for continued value description.)

D-2

## APPENDIXE

## User Notes

This section is reserved for any information relevant to the SIPP 1990 Panel, Wave 8 Topical Module Microdata Research File that indicates specific problems with the data, or that becomes available after the file is released. Any such information should be filed behind this page.

User Notes will be sent to all users who (1) purchased their file (or technical documentation) from the Census Bureau and (2) returned the coupon following the title page.


[^0]:    Sample Unit Identification Number
    Address ID
    Entry Address ID
    Person Number

[^1]:    1 See Executive Office of the President, Office of Management and Budget, Standard Industrial Classification Manual, 1972 and the 1977 Supplement.

