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Part Three

THE USE OF INCOME TAX DATA IN THE NATIONAL RESOURCES COMMITTEE ESTIMATE OF THE DISTRIBUTION OF INCOME BY SIZE

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THE USE OF INCOME TAX DATA IN THE NATIONAL RESOURCES COMMITTEE ESTIMATE OF THE DISTRIBUTION OF INCOME BY SIZE

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1 Statement of the Problem

ANY discussion of the use made of federal income tax data in deriving the estimated income distributions presented in the National Resources Committee report *Consumer Incomes in the United States* should start with a clear understanding of the particular problem involved.[1] The income tax data were to be used only for obtaining the 'tail' of an income distribution, the main body of which was based on extensive primary data on family income collected in the Study of Consumer Purchases.[2] These data, covering the year 1935–36, constituted the largest and most representative body of sample income data ever assembled in this or any other country for the purpose of measuring the distribution of families by size of income. The necessity for using income tax

[1] This paper expands and supplements the discussion of the use of income tax data presented in the National Resources Committee report on *Consumer Incomes in the United States: Their Distribution in 1935–36* (Washington, D. C., August 1938), Ap. A, Sec. 7. This report was prepared under the direction of Hildegarde Kneeland by the Consumption Research staff of the Committee, of which the present authors were members. The National Resources Planning Board (formerly the National Resources Committee) assumes no responsibility for the statements in this paper. Acknowledgment is made to Blanche Bernstein for the preliminary development of procedures for utilizing the tax data.

[2] A Works Progress Administration project conducted by the U. S. Bureaus of Home Economics and of Labor Statistics in cooperation with the National Resources Committee and the Central Statistical Board.

statistics arose solely from an underrepresentation of high income families among the sample income schedules actually collected in the Study of Consumer Purchases.

Inasmuch as the income data collected were specifically designed for the purpose in hand—to measure the distribution of consumer income by size—it seemed entirely appropriate that the Consumer Purchases data determine the basis of adjustment for any supplementary data used; i.e., that the income tax data be made to conform as nearly as possible to the main body of data. Otherwise the situation would have been that of the 'tail' wagging the dog.

The underrepresentation of the upper income classes is a result that can usually be expected in sample income surveys because the more wealthy families are reluctant to reveal their income status in any detail and interviewers have greater difficulties in establishing contact with them. This circumstance has not infrequently in the past, as in the present study, led to the use of federal income tax data as a basis for constructing or adjusting the upper ranges of an income distribution. Unfortunately for the National Resources Committee investigators, none of the earlier studies utilizing the income tax data for this purpose has included a detailed description of the various adjustments that must be made in the income tax statistics to transform the statutory net income classes into total income classes, and otherwise to effect comparability with those income data used in deriving the lower portions of the estimated income distribution.

II Purpose of this Paper

The actual procedures followed in adjusting the National Resources Committee estimates by means of the income tax data were fully described in the methodological appendix of the income report,[3] but relatively little attempt was made to present the results of intermediate steps in this adjustment, or to evaluate the various steps in terms of alternative procedures.

This paper is intended to supplement the descriptive methodology with a somewhat more analytical discussion of the problems involved and the detailed procedures followed. Two current

[3] *Consumer Incomes in the United States*, pp. 80–7.

developments in the field of income analysis make such an elaboration of methodology desirable at this time, quite apart from its possible usefulness to technicians seeking to appraise the reliability of the National Resources Committee estimates or to undertake similar estimates for later years. First of these developments is the proposal to collect family income data on the 1940 Census schedules. This proposal, involving as it apparently will an upper limit on the range of incomes to be covered, will inevitably involve the use of income tax statistics for constructing the upper range of any national distribution of income by size. The second development—which should pave the way for definitely improved procedures in the use of income tax data for such a purpose—is the intensive analysis of income tax returns for 1936 and 1937 now being conducted as a Works Progress Administration project by the Division of Tax Research of the Treasury Department. These analyses are being made on the basis of duplicate income tax returns, available for the first time for 1936. These special tabulations, although applicable to a slightly later period, will provide a very immediate means of testing the reasonableness of many of the assumptions resorted to by the National Resources Committee in utilizing the income tax data for the calendar year 1935.

By pointing out some limitations of the income tax statistics for 1935 and those previously available for 1936, and by analyzing the shortcomings of some of the assumptions and procedures used in constructing the National Resources Committee distribution, this paper can, perhaps, suggest certain points of weakness that may be revealed by these special tabulations. However, as subsequent discussion will indicate, improved tabulations of the basic data from the income tax returns would by no means have solved all problems encountered in the process of adjustment.

III Essential Differences Between Consumer Purchases Data and Income Tax Data

Before describing the series of adjustments undertaken to secure comparability between the distribution based on Consumer Purchases data and the income tax statistics, it will be well to describe

briefly the two sets of income data and to summarize the more fundamental differences between them. Notable among these was the difference in the period covered by the Consumer Purchases Study data and the income tax returns. Other major differences occurred in the items of income included and excluded from the net income figures, and in the reporting units for which the income data were compiled. The combinations and adjustments made in the income tax data to effect comparability with the Consumer Purchases data centered around these three main problems:

1. Adjusting the 1935 income tax data to take account of the increased national income during the fiscal year 1935–36.
2. Adjusting the net income tabulations from the income tax returns to include the items of income covered by the sample income data collected in the Consumer Purchases Study. An integral part of this second step was the adjustment of the income tax data to allow for the nonreporting of income by persons not filing returns, and for the understatement of income by some persons filing returns.
3. Combining and adjusting the income tax data for various types of reporting units to obtain distributions for family units, as defined in the Consumer Purchases Study.

The additional problems encountered in using the income tax data to correct the distributions for single men and women, and for families in separate regions and occupational groups are not discussed in this paper, which has been limited to a description of the methods used in correcting the national distribution for all families.

1 THE YEAR COVERED

The collection of income schedules in the Study of Consumer Purchases extended from the spring of 1936 to the close of that year, with the schedules covering varying 12-month periods between January 1935 and December 1936. Since the majority of the schedules covered approximately the 12 months ending June 30, 1936, the sample income data were assumed to be most representative of that fiscal year. Population weights as of January 1, 1936 were applied to the sample data so that the final income estimates relate definitely to the year 1935–36.

Individual income tax returns, on the other hand, relate, with relatively few exceptions, to the calendar year preceding the date of filing. A negligible number of part-year returns and of returns for fiscal years ending in the period July 1935 through June 1936 were tabulated with the 1935 returns, but the tabulations relate predominantly to the calendar year ending December 31, 1935.

This discrepancy in the year covered involved a substantial adjustment in the income tax data which could have been avoided if the collection of sample income data for the lower income groups had been on a calendar year basis.[4] The recommendation of the Conference on Research in National Income and Wealth to the Census Bureau that the calendar year 1939 be substituted for the 12-month period ending March 31, 1940 in the proposed Census collection of income data is directly relevant to this problem of comparability with the income period covered by the federal income tax returns.

2 THE DEFINITION OF NET INCOME

a) *Net income as defined in the Study of Consumer Purchases*

Income was defined in the Study of Consumer Purchases to include the total net money income received during the year by a family or single individual, plus the imputed value of certain items of non-money income. Money income comprised the net earnings of all family members, including work relief earnings, earnings from roomers and lodgers, and other paid work in the home; net profits from business enterprises operated or owned by the family; net rents from property; interest and dividends from stocks, bonds, and other property; pensions, annuities, and benefits; gifts in cash in so far as these are used during the year for current living expenses; and income received as rewards, prizes, alimony, or gambling gains. Excluded from net money income were gains and losses from the sale of capital assets owned at the beginning of the schedule year; inheritances (except that part used for current living expenses); soldiers' bonus payments and funds obtained through borrowing. The estimated value of

[4] The Consumer Purchases Study adopted a variable schedule year, in the belief that families could report more accurately on the 12-month period immediately preceding the date of interview than on a calendar year ending some months previously.

direct relief in cash (and also in kind) was added to income in an adjustment of the relief family distributions made for this purpose by the National Resources Committee.

Business and occupational expenses, including all taxes on income-producing property and on business operations were deducted in calculating net income from earnings and from property, but personal taxes, such as income, property, and poll taxes were not deducted. Net business losses from the operation of all independent business, net losses on rental property, and money losses from sales of securities and real estate bought and sold during the schedule year were deducted in calculating net income, but no deduction was made for depreciation in the value of property owned.

Non-money income items included the net value of the occupancy of an owned home and rent received as pay, as well as the estimated value of direct relief received in kind. For farm and village families it included, in addition to these items, the net imputed value of food produced at home for the family's own use. For farm families it included also the net imputed value of certain other farm-produced goods used by the family—i.e., fuel, ice, tobacco, and wool—plus or minus the value of any increase or decrease in the amount of livestock owned or of crops stored for sale.

b) *Net income as defined in the 1934 Revenue Act*

Net income for income tax purposes is defined according to the provisions of the revenue act effective for the year for which the income tax returns are filed.[5] These provisions ordinarily define *gross income* in terms of those items of income to be accounted for on the income tax return, and then authorize various *deductions* and *credits* which the taxpayer can claim in determining his tax liability. Statutory net income represents the amount of 'gross income' in excess of the specific 'deductions' allowed by law. These deductions, it must be emphasized, do not include the credits for personal exemption and for dependents which are

[5] Changes in the provisions of the revenue acts affecting the definitions of net and gross income will, of course, require appropriate changes in the procedures used to effect comparability of the income tax data for various years, as well as comparability with income data from other sources.

subtracted from the net income figures in determining the amount of *surtax net income,* or the earned income credit which is subtracted from the surtax net income in determining the *net income subject to normal tax.*[6]

Gross income to be reported on the 1935 income tax returns was by no means equivalent to the gross income concept followed in the Study of Consumer Purchases. There are distinct differences in the items of income included within the concept of gross income, as well as in the deductions allowed in arriving at a net income figure. The Revenue Act of 1934, under which the 1935 returns were filed, specifically excluded from gross income several types of money income covered by the Consumer Purchases Study definition and failed to enumerate such items of non-money income as the occupancy of an owned home, or the value of home-produced food. On the other hand, gross income as defined for income tax purposes includes net gains resulting from the sale and exchange of all capital assets. The Consumer Purchases data, as noted earlier, include only those gains realized on the sales of securities and real estate bought and sold within the schedule year.

Sources of income specifically enumerated on the income tax returns include: salaries, wages, commissions and fees, profits from independent businesses and partnerships, net capital gains, rents and royalties, dividends on stock of domestic corporations; income from fiduciaries, taxable interest on partly tax-exempt government obligations; other taxable interest, and 'other income'.

Specifically excluded from 'gross income' by law are: amounts received under a life insurance contract by reason of the death of the insured; amounts received from insurance and endowment contracts not in excess of the premiums or considerations paid; gifts and money and property acquired by bequest, devise, or inheritance; interest upon the obligations of a state, territory, or any political subdivision thereof, or the District of Columbia, or United States possessions, obligations listed under the Federal

[6] Dividends on stock of domestic corporations and taxable interest on partly tax-exempt government obligations were also allowed as credits in determining net income subject to normal tax in 1935, but they are included in the net income figures.

Farm Loan Act, obligations of the United States or instrumentalities of the United States such as Federal Farm Mortgage Corporation bonds, Home Owners Loan Corporation bonds; amounts received through accident or health insurance or under workmen's compensation acts as compensation for personal injuries or sickness or as damages; the rental value of a dwelling house and appurtenances furnished to a minister of the gospel as part of his compensation; compensation paid by a state or political subdivision thereof to its officers or employees for services rendered in connection with the exercise of an essential government function; and amounts received as earned income from sources outside the United States (except amounts paid by the United States or any agency thereof) by an individual citizen of the United States who is a bona fide non-resident for more than six months during the taxable year.

Some of these exempted items are, of course, also excluded from the Consumer Purchases data—e.g., gifts not used for current living expenses, inheritances, and lump-sum insurance and compensation payments. Other items, notably interest from federal, state, and local government obligations, compensation paid to state and local government employees, pensions, annuities, and benefits not directly contributed to by the beneficiary, and earned income from sources outside the United States are either explicitly or implicitly covered by the data reported on the income schedules collected in the Consumer Purchases Study. Some of the minor differences in the gross income coverage are not specifically cared for in the adjustments made.[7]

In the description of the Consumer Purchases data, it was explained that losses and expenses incurred in connection with business operations and income-producing property, including all taxes levied on such business operations and property, were deducted in calculating net income. Capital losses were deductible to the extent that they were incurred from sales of

[7] For example, no attempt was made to correct the income tax data for such items as compensation for injuries and sickness, or the rental value of a dwelling house furnished to a minister of the gospel, which were omitted from gross income as defined by the Revenue Act of 1934 and hence from statutory net income. Similarly, it was not possible to estimate the portion of capital gains that was included in the Consumer Purchases data and to allow for it in the adjustment of statutory net income for net capital gains included.

securities and real estate that had been both bought and sold within the 12-month period covered by the schedule year.

Deductions from gross income allowed by the 1934 Revenue Act were much more comprehensive. In addition to the business deductions reported in Schedules A and B, which are generally comparable to the business expenses and taxes deducted in the Consumer Purchases Study, the income tax statistics classify seven other types of deduction: business loss, partnership loss, net capital loss, interest paid (other than business interest which was included as a business expense), taxes paid (other than business taxes), contributions, and 'other deductions'.

Of these seven types of deduction the first two alone were allowed in full in the Consumer Purchases data. Net capital loss was allowed only if it had resulted from the sale of assets bought and sold during the schedule year. No taxes, other than business taxes and taxes on income-producing property, were deductible in calculating net income for the Consumer Purchases Study. The income tax requirements allowed the deduction of taxes paid on owned homes (except those assessments tending to increase the value of the property assessed), personal property taxes, and other personal taxes except federal income taxes, estate, inheritance, legacy, succession and gift taxes.

c) *Summary of differences in net income classification*

The inevitable result of these various differences in the concepts of gross income and in the deductions made in arriving at net income figures was a serious lack of comparability between an income classification based on net income as defined in the Consumer Purchases Study and one based on net income as defined for income tax purposes.

The major steps necessary to effect comparability in the net income figures (apart from the differences in the year and in the reporting units covered by the individual returns) can be summarized under three headings: (1) the exclusion from the income tax data of reported net capital gains resulting from sales or transfers of assets held at the beginning of the year, and the inclusion of reported net capital losses resulting from such transactions; (2) the addition to the income tax figures of the reported amounts deducted for interest paid, taxes paid, contributions and

'other deductions'; (3) the addition to the income tax figures of items of non-money income and those items of money income which were excluded from gross income as defined for income tax purposes but were included in the Consumer Purchases income data.

If we assume, as the National Resources Committee study implicitly does, that families interviewed in the Consumer Purchases Study reported their net incomes with reasonable accuracy, this third step would logically include the addition not only of the tax-exempt interest and other legally exempted items mentioned earlier, but also the addition of those amounts of income that are illegally omitted from the income tax returns by persons deliberately understating their incomes or failing to file a return.

As will be indicated later, the information necessary to effect complete comparability in income classification was not available, even if there had been unlimited time and money for special tabulations of the 1935 income tax data. The individual income tax returns contain some, but by no means all, of the separate items that would be involved in the adjustments required.

3 THE REPORTING UNITS FOR WHICH DATA WERE COMPILED

Since the Study of Consumer Purchases was planned primarily for the analysis of consumption expenditures at different income levels, the income data were collected and tabulated on the basis of spending or 'consumer' units rather than individual income recipients. Three main types of consumer units were distinguished in the National Resources Committee report, but only two—the family of two or more persons living together as one economic unit, and the single individual maintaining an independent economic status—were included in the distribution of income by size. Members of institutional groups, numbering approximately 2,000,000, were omitted from the final distribution on the grounds that they were not comparable, either in their income or expenditure status, to unattached single individuals. This omission affected the Consumer Purchases distribution only in the lower income levels and hence had no effect on the use of the income tax data for correcting the estimates.

As contrasted with the two major types of consumer units distinguished in the National Resources Committee distributions, the individual income tax returns filed with the Bureau of Internal Revenue are classified, on the basis of the sex and family relationships of taxpayers, into nine groups:

1. Joint returns of husbands, wives and dependent children, and returns of either husband or wife when no other return is filed
2. Separate returns of husbands
3. Separate returns of wives
4. Male heads of families, including single men and married men not living with wives
5. Female heads of families, including single women and married women not living with husbands
6. Returns of single men and married men not living with wives, not heads of families
7. Returns of single women and married women not living with husbands, not heads of families
8. Community property returns
9. Returns of estates and trusts

The returns in groups 1, 4, and 5 in general represent returns for family units and hence approximate most closely the family income data from the Study of Consumer Purchases. But even in these instances it is the legal relationship of dependency that determines the composition of the family unit covered by the return, not participation in a common economic existence. Supplementary incomes received by wives and by dependent children under 18 are required by law to be included in these three types of returns, but the incomes of supplementary earners other than dependents are not ordinarily covered by the family return. In some cases, even the incomes of minor children are omitted from the return because the income is not within the legal control of the family head.

If the income of a non-dependent supplementary earner exceeds the personal exemption allowed under the income tax law, a separate income tax return is required. Such returns would presumably be classified by the Bureau of Internal Revenue in groups 6 and 7, and could not be segregated from the returns of single individuals maintaining an independent fam-

ily existence. More often, of course, the 'supplementary' incomes would be too small to require the filing of separate tax returns, and no tabulation of the income tax data would afford any clue as to the amount or distribution of such income omitted from the so-called 'family' returns.

The returns in groups 2 and 3 and the community property returns in group 8 represent returns made by members of family units, but inasmuch as the separate returns of husbands and wives belonging to the same family unit were not paired by the Bureau of Internal Revenue in tabulating the 1935 data for these groups, it was not possible to reconstruct the original family units and obtain a distribution of them according to the combined family income. The pairing of husbands and wives into hypothetical family units was one of the most difficult problems presented by the use of the 1935 tax data. The special tabulations now being made of the 1936 individual income tax returns will include a tabulation of such returns on a combined net income basis, which should obviate the necessity for one of the more arbitrary steps in the adjustment of the income tax data for use in deriving a distribution of family incomes. The results of this 1936 tabulation will indicate the direction, and suggest roughly the magnitude, of the error introduced into the National Resources Committee distribution by the artificial pairing of the separate returns of husbands and wives.

The individual returns classified by the Bureau of Internal Revenue in groups 6 and 7 would presumably include all single individuals as defined in the Consumer Purchases Study, i.e., unattached individuals living alone, and those living with family groups but maintaining a separate economic existence, but would include, also, some individuals actually belonging to economic family groups and pooling their incomes into the common family fund. As suggested above, the income tax tabulations afford no basis whatever for segregating the latter group of returns. It seems reasonable, however, to assume that relatively few of those with independent incomes of $3,000 or more would actually be pooling their incomes into the common family fund. Accordingly, no attempt was made to utilize any of the returns in groups 6 and 7 in adjusting the family distribution. Those returns showing net incomes above $3,000 were used as

the basis for correcting the National Resources Committee estimated income distributions for single men and single women.

Income tax returns filed by estates and trusts were excluded from consideration on the grounds that the undistributed income reported in them was not a part of current consumer income, having not yet reached the hands of families and single individuals. In this respect, such income resembles undistributed corporate earnings, which are excluded from the Department of Commerce estimates of national income paid out, although they are included in national income produced.

IV Available Tabulations of the Income Tax Data

Tabulations of data from federal income tax returns for 1935 were released to the National Resources Committee in photostated form in the same detail that they were later published by the Bureau of Internal Revenue in *Statistics of Income for 1935*.[8] These tabulations included the following basic tables:

TABLE 5: Individual returns for 1935 by net income classes and by sex and family relationship, showing number of returns and net income

TABLE 7: Individual returns for 1935 by net income classes, showing sources of income, deductions and net income; also total number of returns, and, for returns with net income of $5,000 and over, number of returns for each specific source of income and deduction

TABLE 9: Individual returns for 1935, by state and territories and by net income classes, showing number of returns, net income and total tax; also totals for preceding years

Data on interest received from wholly and partly tax-exempt obligations, appearing in *Statistics of Income for 1935*, were also made available by the Bureau of Internal Revenue before publication, with the warning that tabulations of these data probably do not reveal the full amount of tax-exempt interest received by those filing returns. The information is compiled from data

[8] U. S. Treasury Department, Bureau of Internal Revenue, *Statistics of Income for 1935*, Part I. Mr. Merwin is in error in assuming that the 1935 tabulations were incomplete at this time; see C. L. Merwin, Jr., Part One, Sec. II, 3, d. The tabulations regularly compiled for the *Statistics of Income* do not include a breakdown of deductions and sources of income by type of return.

contained in one of the supplementary informational schedules on the income tax return and is frequently incomplete.[9]

Complete statistics of individual income tax returns for 1936 were not available at the time the National Resources Committee estimates were prepared. Preliminary data for the returns filed during the first nine months of 1937 were available, in summary form, from two press releases issued by the Treasury Department in February and March 1938. These releases presented data on number of incomes, net income, sources of income, and deductions for all types of individual returns combined, but not for the separate groups of returns listed earlier. Even for total returns, the data were classified only by broad income classes above $5,000 and not by the detailed income classes used in the 1935 tabulations. Had the complete tabulations for 1936 returns been available in the same detail as those for 1935 and preceding years, it would have been possible to effect a much less arbitrary adjustment of the 1935 data to allow for the effects of the increased national income during the fiscal year 1935–36.

Complete tabulations are made only from those returns showing net incomes of $5,000 and over. The statistics pertaining to individual returns showing net income of less than $5,000 represent estimates based on samples of such returns, and do not include information on the number of returns showing specific sources of income or deductions. Accordingly, it was not feasible, even if it had seemed desirable, to derive a satisfactory distribution based on the income tax data below the $5,000 level.

Returns showing net incomes above $5,000 were tabulated into 34 income classes: ten $1,000 intervals between $5,000 and $15,000; three $5,000 intervals, seven $10,000 intervals, four $50,000 intervals, two $100,000 intervals, and two $250,000 intervals between $15,000 and $1,000,000; five income intervals, ranging from $500,000 to $1,000,000 in width, between $1,000,000 and $5,000,000, and one open income interval for incomes of $5,000,000 and over.

It seemed desirable, for two reasons, to carry through the adjustments of the income tax data for this entire income range. In the first place, there was no satisfactory way of determining at just what income level the under-representation of high in-

[9] See *Statistics of Income for 1935*, p. 29.

come families began in the Consumer Purchases Study. Even if it were assumed that the data were fully representative for incomes up to $10,000 or more, it still seemed desirable for comparative purposes to achieve as much of an overlap as possible in the income ranges covered by the two sets of data.

In the second place, it was realized that the addition of omitted items of income to adjust the income tax data would involve the shifting of returns and of aggregate income from one income level to a higher income level, and that it would therefore be necessary to drop out of the final distribution those income classes immediately above the point at which adjustments were undertaken. Thus a portion of the returns in the net income class $5,000–$6,000 would be moved out of the income class into the next higher class, but the adjustment would not reflect the upward shifting of returns and net income from the income class just below $5,000. Hence in order to obtain a satisfactory income distribution above $7,500, it was necessary to make use not only of the income tax data for the entire range above $5,000, but in the early stages of the adjustment, of the estimated data immediately below that point as well.

V Steps involved in Combining and Adjusting the Income Tax Data

Before describing the series of steps taken to adjust the income tax data, some attention should be given to the sequence in which these various steps were undertaken and the implications of that sequence so far as the final results are concerned.

1 SEQUENCE OF VARIOUS ADJUSTMENTS

To a considerable extent the nature of the available statistical data governed the order of the various adjustments. One major consideration affecting the decision as to order was the chameleon-like nature of the net income classification as the adjustment proceeded from one step to the next. This difficulty is, of course, inherent in the problem itself and cannot be avoided by any conceivable sequence of adjustments, but it did seem possible to avoid some of the most obvious errors of logic.

One might assume, for example, that all adjustments neces-

sary to effect comparability in the net income classification should be carried through at the same time, either as one step or as consecutive steps. But available data for the various types of income to be added to or subtracted from the net income figures in the *Statistics of Income* tabulations were based on two very different income classifications. Data on capital gains, capital losses, other types of deductions, and income from tax-exempt securities were tabulated according to the statutory net income classes used in *Statistics of Income*. Data on income from supplementary family earners and on imputed income were tabulated according to the net income classes used in the Study of Consumer Purchases.

It seemed desirable, therefore, to carry through the adjustments for net income classification at two distinct stages: subtracting net capital gains and adding net losses, deductions and tax-exempt interest at the various income classes at an early stage, before the statutory net income classes had been affected by other adjustments, and postponing the addition of the income of supplementary earners and the addition of non-money income at each income level as late as possible, until the income classification had been made to correspond as closely as possible with that used in the Study of Consumer Purchases.

Since the adjustment from a 1935 to a 1935–36 basis also involved the use of comparable data from the 1935 and 1936 income tax returns, it was made at an early stage before the arbitrary adjustments for nonreporting and understatement were made.

The meaning of the net income classification at these intermediate steps of adjustment is, at best, anomalous. Thus the adjustment for nonreporting and understatement assumes a specific percentage of understatement by families with incomes between $5,000 and $10,000. This percentage is applied to the aggregate income of families within that numerical dollar range after adjustments have been made for capital gains and losses, deductions and tax-exempt interest and for the difference in year covered, but before adjustments for supplementary incomes and imputed values. Use of the conventional income intervals for the original assumptions as to percentages of understatement is convenient, but the procedure obviously im-

plies no fine discrimination in applying them to the income classification at that particular stage of adjustment.

It would be a mistake, therefore, to attach too much significance to the exact sequence of steps adopted in the National Resources Committee procedures.[10] While a change in sequence would undoubtedly affect the statistical results to some extent, it is by no means set up as the only possible or logical sequence.

2 COMBINING RETURNS FOR FAMILY UNITS

A first objective in the income tax adjustments was to combine the various types of returns made by members of family units to obtain a single distribution of family units by size of income. In the case of joint returns, and returns made by male or female heads of families when no other return was filed (groups 1, 4, and 5), this was accomplished by simply adding the frequencies of the three types of returns at each income level. Aggregate net incomes for the three types of returns were combined in similar manner.

Before further combinations could be made, it was necessary to devise some method for transforming the separate returns of husbands and wives into equivalent family returns. This problem involved not only the separate returns of husbands and wives in groups 2 and 3, but also the community property returns in group 8, which represent either joint or separate returns of husbands and wives deriving income from property that is jointly owned.

3 DIVIDING COMMUNITY PROPERTY RETURNS

The community property returns, filed by residents of only a few states, are tabulated by the Bureau of Internal Revenue under several headings. The community property classification

[10] See Merwin, Part One, Sec. II, 3, d. Mr. Merwin seems to question the logic behind the footnote in the National Resources Committee report which says, "The sequence of the adjustments for nonreporting and for understatement implies that families added to the distribution to allow for nonreporting would have understated their incomes to the same extent as did the families that actually filed income tax returns." This comment was intended merely to point out what was implicit in the arithmetic, and not as a considered opinion of how nonreporting families might have behaved in reporting their incomes. The reversal of order of these two steps would have had virtually no effect on the statistical results.

in *Statistics of Income* includes only those joint returns with net incomes of $10,000 or more, and the separate returns with net incomes of $5,000 or more. Joint returns of community property showing net incomes under $10,000 are classified directly with the joint returns in group 1, and the separate returns showing net incomes of less than $5,000 are classified directly with the returns of husbands and wives filing separate returns (groups 2 and 3).

For tabulation purposes the joint community property returns on incomes of $10,000 or over are divided by the Bureau of Internal Revenue to represent separate returns of husband and wife. If the joint return, as filed, indicates the actual division of net income, deductions, etc., as between husband and wife, the Bureau observes this division in the tabulating procedure. If the joint return does not indicate the actual division of items, an arbitrary division is made by the Bureau, which assigns one-half of the combined net income, and of each deduction item, to the husband and the other half to the wife. The data are then tabulated as two separate returns, with the net income class of each return equal to one-half of the net income of the joint return. The distribution of returns and of net income under the community property heading is comparable in composition, therefore, to a single distribution comprising the separate returns of both husbands and wives (groups 2 and 3).

Since information was not available from the Bureau of Internal Revenue on the actual proportion of husband and wife returns at each income level in the community property classification, it seemed reasonable to split the data by applying to the number of returns and to the aggregate net income at each income level the proportions shown for the separate husband and wife returns classified in groups 2 and 3. This procedure yielded two distributions: one of the community property returns of wives, which was then added by income level to the separate returns of wives in group 2; and another of the community property returns of husbands, which was added to the separate returns of husbands in group 3.

The statutory net income reported on the returns classified under the community property grouping totals less than six per cent of the aggregate net income shown by returns of family

members with incomes of $5,000 or more, so that the possible error introduced by this arbitrary method of division would have little effect on the final distribution of family units.

4 PAIRING INCOMES OF HUSBANDS AND WIVES MAKING SEPARATE RETURNS

Up to this point, the combination of various types of returns has proceeded on the basis of the net income classes in the *Statistics of Income*, without regard to possible differences in the kind and magnitude of deductions claimed by the various types of returns, or in the amount of capital gains or tax-exempt interest received by them. Since the tabulations of the 1935 income tax data made by the Bureau of Internal Revenue do not show the relative proportions of these items attributable to each class of return, any assumption concerning the differences by type of return would have been highly arbitrary, and it seemed simpler and quite as reasonable to accept the statutory net income classification as the basis for combining returns in groups 1, 4, and 5, postponing the adjustment for deductions and omitted items of income to a later stage.

a) *Net income adjustment for separate husband and wife distributions*

This reasoning might have led to the decision to complete the combination of various types of returns of family members on the statutory net income basis, that is, to match the returns of husbands and wives into family returns, and add these to the joint returns and the returns of family heads before correcting for capital gains, deductions, and tax-exempt income.

Actually, these adjustments of the net income classification were carried through independently for the separate returns of husbands (including community property returns of husbands); the separate returns of wives (including community property returns of wives); and the combined distribution of joint returns and returns of family heads (groups 1, 4, and 5). The adjusted distributions for husbands and for wives were then merged, by the procedures described below, into a single distribution representing family units. This new distribution of husband-wife

units was added by income level to the adjusted income distribution comprising joint returns and returns of family heads.

The decision to adjust the net income classification before completing the combination of family returns was largely arbitrary, arising from the belief that the optional division of deductions and net income items in the separate returns of husbands and wives might result in characteristic differences between these two distributions in the kinds and in the average amounts of the various income and deduction items at a given income level.

Unfortunately, even if this assumption is valid, the unavoidably arbitrary method of allocating capital gains, deductions, and tax-exempt interest among the various types of return, on the basis of the percentage distribution of aggregate net income at the various income classes, effectively leveled off such characteristic differences as might exist, and thus nullified any advantages to be gained from adjusting the net income classification before making the final combination into family returns.

The special tabulations of 1936 income tax returns now being carried on by the Treasury Department will include classifications of specific sources of income and deductions by type of return, which will reveal such differences as may exist among the various types of returns in the frequency and in the average amounts of such items, and thus provide the basis for more exact adjustments of the net income classifications for the different types of returns. The findings may suggest that the net income adjustments should be made separately for each type of return, even those in groups 1, 4, and 5, before any combinations have been made.

b) *Pairing incomes of husbands and wives*

As indicated above, the combination of the distributions of the separate returns of husbands and of wives to form a single distribution of family units was made after the two distributions had been adjusted for deductions, capital gains, and tax-exempt interest. Absence of satisfactory statistical material to use as a basis for this combination necessitated a highly arbitrary procedure in pairing the husband and wife units. Essentially, the combination was made in accordance with the general assumption that

husbands and wives making separate returns endeavor to divide the family income as evenly as possible in order to avoid the heavy surtax charges that apply at the high income levels. It should be remembered, in this connection, that the pairing scheme adopted related to a selected group of husband-wife units, and in no way reflects the relative magnitudes of the incomes of husbands and wives in general.

In the pairing scheme adopted, some of the husbands at the highest income level were assigned wives at the same level. But since the number of husbands reporting high incomes was considerably greater than the number of wives, the majority of the husbands at the highest level were necessarily assigned wives at the next lower level. Proceeding down the income scale in this fashion, every husband was paired with a wife, with the latter in most instances coming from a lower income class than the husband. Thus only at the very highest income level, where the incentive was greatest to divide incomes equally, did the method involve the pairing of husbands and wives at the same income level to form a family unit with approximately double the income of the separate returns.[11] For example, only about 10 per cent of the husbands with incomes between $50,000 and $100,000 were assigned wives with incomes within that same income range. The other 90 per cent of husbands in this class were assigned wives with incomes ranging from $50,000 down to $20,000. Similarly, husbands with incomes between $10,000 and $15,000 were paired with wives whose incomes ranged from $7,500 to as low as $3,500. In every case, the sum of the incomes of the paired husband and wife determined the income level of the combined family unit.

The final number of husband-wife units with incomes above $5,000 was somewhat greater than the number of husbands filing separate returns with incomes over $5,000, inasmuch as some husbands with incomes below $5,000 were paired with wives whose incomes were also below $5,000, but sufficient to bring the combined income over $5,000 (see Table 1).

The new distribution of husband-wife units was now com-

[11] See Merwin, Part One, Sec. II 3. d. The National Resources Committee procedure does not require acceptance of the belief that the "majority of the so-called 'economic royalists' share their properties and incomes evenly with their wives".

bined with the distribution of other family units by adding the frequencies and the aggregate income at each income level.

c) *Alternative method of pairing incomes of husbands and wives*

The method used in creating the artificial husband-wife units is, of course, open to criticism. It might be argued that it represents an extreme among the possible methods that could have been used; that a distribution of husband-wife units derived by pairing high-income husbands with medium-income wives, and high-income wives with medium-income husbands, would have been more plausible. The results of the current Treasury analysis of 1936 returns, which will show the separate returns of husbands and wives paired into the original family units, may well indicate that some such modified procedure is desirable.[12]

Meanwhile, rather than attempt various alternative methods of combining husband and wife returns—none of which could be interpreted as a measure of the error involved in the present estimates—there has been prepared, for comparative purposes, a distribution that ignores not only the incentive offered by the income tax requirements to split the family income as evenly as possible, but also any other influences, such as similar social and economic status, which might lead high-income husbands to marry high-income wives. Under the particular circumstances presented by the income tax statistics, such a distribution represents a situation probably quite as extreme as the one presented by the National Resources Committee.

The procedure used in preparing this alternative distribution is that of pairing 90,300 husbands with incomes of $4,000 and over with the same number of wives with incomes of $1,000 and over by allocating to the husbands at each income level an equal number of wives drawn from income classes throughout the income range in accordance with the percentage distribution of wives filing separate income tax returns for 1935. For example, of the 16,550 husbands with adjusted net incomes between $10,-

[12] The reader should be warned, however, against drawing a conclusion to this effect from the findings shown by tabulations of state income tax data such as those prepared in the Wisconsin study. The Wisconsin law required the filing of separate returns whenever both husband and wife are income recipients. Hence the husband and wife returns do not represent a selected group seeking to reduce tax liability by means of separate returns.

000 and $15,000, eight per cent were paired with wives having incomes between $10,000 and $15,000; nine per cent with wives having incomes between $7,500 and $10,000, etc.[18] This procedure, of course, means that wives in any given income level will be paired with husbands scattered throughout the income range. The resulting distribution of husband-wife units with incomes above $5,000 is compared in Table 1 with the distribution obtained by the methods used in the National Resources Committee study.

The total number of husband-wife units and their aggregate income are, of course, unchanged. The alternative procedure yields a distribution, however, that shows relatively fewer units at the two extremes of the income range between $5,000 and $1,000,000 and over, and correspondingly more units in the middle income classes. Thus, 3 per cent of the husband-wife units were assigned to the income classes above $100,000 and 30 per cent to the classes between $5,000 and $10,000 as a result of the method of pairing used in the National Resources Committee study, while 2 and 17 per cent, respectively, were assigned to these two income groups as a result of the alternative procedure. At all but one of the income levels between $10,000 and $100,000, the latter procedure indicated higher proportions of the husband-wife units than were obtained by the methods actually used in the National Resources Committee study. In interpreting these figures it should be remembered that for the income level below $7,500, the estimates derived by both methods are extremely tenuous, and that data for this income class were not used, as such, in the final distribution of families.

It appears that the method of combining the separate returns of husbands and wives might perhaps have been somewhat modified in line with the results shown by this alternative procedure, i.e., that the proportions of husband-wife units at the two extremes of the distribution should have been slightly reduced and those in the middle income range slightly raised. The most important effect of such a modified procedure would be a re-

[18] The percentages cited can be obtained by dividing the figures in the second column of Table 1 for the relevant income classes by 90,300, the total number of wives paired with husbands. The total entered in the second column, 38,362, is solely for wives with incomes of $5,000 and over.

TABLE 1

COMPARISON OF TWO DISTRIBUTIONS OF HUSBAND-WIFE UNITS WITH INCOMES OF $5,000 AND OVER, BY INCOME LEVEL, OBTAINED BY USING TWO METHODS OF PAIRING INCOMES OF HUSBANDS AND WIVES

INCOME CLASS	DISTRIBUTIONS OF RETURNS AFTER ADJUSTMENT FOR NET CAPITAL GAINS, DEDUCTIONS FROM GROSS INCOME, AND INTEREST FROM TAX-EXEMPT OBLIGATIONS [1] SEPARATE RETURNS (INCL. COMMUNITY PROPERTY RETURNS) OF:		DISTRIBUTIONS OF HUSBAND-WIFE UNITS OBTAINED BY USING:			
			NATIONAL RESOURCES COMMITTEE METHOD		ALTERNATIVE METHOD	
	HUSBANDS	WIVES	NUMBER OF HUSBAND-WIFE UNITS	PER CENT	NUMBER OF HUSBAND-WIFE UNITS	PER CENT
$5,000–$7,500	17,900	12,600	8,750	9.7	4,264	4.7
7,500–10,000	14,750	7,800	18,205	20.2	10,958	12.1
10,000–15,000	16,550	7,300	17,825	19.7	22,016	24.4
15,000–20,000	8,450	3,300	12,388	13.7	15,042	16.7
20,000–25,000	5,100	2,000	8,250	9.1	9,905	11.0
25,000–30,000	3,350	1,250	6,362	7.0	6,243	6.9
30,000–40,000	4,550	1,550	6,450	7.1	7,985	8.9
40,000–50,000	2,550	750	3,670	4.1	4,149	4.6
50,000–100,000	4,450	1,400	5,375	6.0	7,638	8.5
100,000–250,000	1,150	325	2,266	2.5	1,759	1.9
250,000–500,000	150	60	555	0.6	212	0.2
500,000–1,000,000	80	18	152	0.2	100	0.1
1,000,000 and over	20	9	52	0.1	29	[2]
Total	79,050	38,362	90,800	100.0	90,800	100.0

[1] For frequency distributions of separate returns of husbands, separate returns of wives, and community property returns, before the adjustments for net capital gains, deductions from gross income, and interest from tax-exempt obligations, see Table 4.

[2] Less than 0.05 per cent.

duction in the proportions of aggregate family income at both extremes of the $7,500 to $1,000,000 and over income range, but more particularly at the highest income class.

5 ADJUSTING FOR CAPITAL GAINS, VARIOUS TYPES OF DEDUCTION, AND TAX-EXEMPT INTEREST

As indicated above, the adjustments made to bring the statutory net income classification more closely in line with the definition of net income used in the Consumer Purchases Study were carried through independently for three groups of returns[14] before the final combination of the returns made by family members into a single distribution by family units. To accomplish this adjustment, it was proposed to subtract net capital gains from statutory net income, and to add deductions for net capital losses, interest and taxes paid, contributions and 'other deductions', as well as the amount of income received from wholly or partly tax-exempt securities. It was not necessary to add to the statutory net income the other two types of deduction allowed on the income tax returns—business loss and partnership loss—since these items had also been deducted from gross income in deriving net income as reported in the Consumer Purchases data.

For reasons discussed below, it was decided to adjust statutory net income for the exclusion of capital gains and the inclusion of the five types of deduction and tax-exempt interest in a single step, rather than to correct separately for each item. Net capital loss reported by all returns with statutory net incomes of $5,000 or more amounted to $69 million in 1935, interest paid to $241 million, taxes paid (allowable as deductions) to $268 million, contributions to $148 million, and 'other deductions' to $320 million. The five items of deduction summed to $1,046 million. Tax-exempt interest from wholly or partly tax-exempt securities, not included in gross or in statutory net income, was estimated at $250 million for the $5,000 and over income range.[15] Net

[14] Joint returns combined with returns of heads of families, separate returns of husbands combined with community property returns of husbands, and separate returns of wives combined with community property returns of wives.

[15] As indicated in Sec. IV, the data on tax-exempt interest are known to be incomplete.

capital gain for this income range was reported as $400 million. The net increase in aggregate income for all types of returns represented by these several items was therefore $896 million.

a) *Division of income and deduction items among groups of returns*

As a first step in the adjustment, it was necessary to distribute this total amount among six groups of returns:

1. Joint returns of husbands, wives, and dependent children, plus the returns of either husband or wife when no other return is filed, and the returns of heads of families who are single men, married men not living with wives, single women, or married women not living with husbands
2. Separate returns of husbands, including community property returns
3. Separate returns of wives, including community property returns
4. Returns of single men and of married men not living with wives, not heads of families
5. Returns of single women and of married women not living with husbands, not heads of families
6. Returns of estates and trusts

The division among these groups was made on the basis of the percentage distribution of statutory net income among the six groups at each of the 34 income levels above $5,000. Of the total of $896 million, $160 million was thereby assigned to the returns of persons not heads of families and the returns of estates and trusts. The remainder, $736 million, was assigned to the first three groups of returns comprising members of family units. The bulk of this amount, $428 million, was to be added to the net income of the first group of family units with statutory net incomes of $5,000 or more, $225 million to the separate returns of husbands in group 2, and $83 million to the separate returns of wives in group 3.

b) *Addition of average amounts to statutory net income*

The procedure used in adding these amounts to the statutory net income classes in each of the three distributions involved two

main steps: (1) the actual addition of the assigned amount to the aggregate income at each income level; (2) the shifting of a certain proportion of the returns, together with their statutory net income and their assigned amount of additional income, from one income class to the next higher class. Such shifting was necessary because the addition of deductions and tax-exempt interest to those returns that were already near the upper limit of a given statutory net income class brought their incomes within the range of the next higher class—the new income class being on an 'adjusted' rather than a 'statutory' net income basis. For example, if an average amount of $2,284 in deductions and tax-exempt interest is added to the returns in net income class $15,000–$20,000, those returns which had statutory net incomes of $17,716 or more would shift upward into the class interval of $20,000 to $25,000.

The number of returns shifting from one income class to the next higher class was determined on the basis of a cumulative frequency curve drawn freehand for each of the three groups of returns representing members of family units. The number of returns between the upper limit of the income class and the point of shift was read from the curve, the latter point being the difference between the upper limit of the class and the average amount of deductions and tax-exempt interest assigned to the level. This average was derived by dividing the aggregate deductions and tax-exempt interest (minus the capital gains) in the income class by the total number of returns in the class. In order to simplify the procedure, the 34 income classes that had been used up to this point were combined into 14 broader income levels—the 12 levels above $7,500 in Table 1, and two additional levels, $5,000–$6,000, and $6,000–$7,500.

The aggregate deductions and tax-exempt interest assigned to each income class was distributed between the group of returns remaining in the class and the group shifting to the next higher class on the basis of the relative magnitudes of the two groups. The returns shifting upward were assumed to have been evenly distributed between the point of shift and the upper limit of the income class. The aggregate net income of this group was calculated, therefore, by multiplying the number of such returns by the midpoint between the point of shift and the upper

limit of the class.[16] Thus, the adjusted aggregate income in each income class was derived by adding to the aggregate statutory net income in the class the additional aggregate income from deductions and tax-exempt interest accruing to those returns remaining in the class, plus the aggregate net income and the income from deductions and tax-exempt interest of those returns shifting into the class, and subtracting the aggregate net income[17] of those shifting out of the class.

As a result of this procedure the aggregate income of returns with incomes of $5,000 and over in the three distributions comprising members of family units was increased $1,026 million, an amount $290 million greater than the estimated amount of deductions and tax-exempt interest added to the returns with incomes of $5,000 or more. This difference of $290 million represented the net income and the deductions and tax-exempt interest of returns shifting upward from the income class directly below $5,000.[18]

[16] In the example given above, the midpoint between $17,716 and $20,000. The resulting amount of aggregate income was subtracted from income class $15,000–$20,000 and added to income class $20,000–$25,000. Income from deductions and tax-exempt interest was calculated by multiplying the number of returns shifting by the average amount of deductions and tax-exempt interest that was added to their returns.

[17] Thus, in the example given above, the amount of aggregate net income added at income class $20,000–$25,000 was subtracted from income class $15,000–$20,000.

[18] Although the adjustments of the income tax data were made primarily for the income range above $5,000, it was necessary, in this and in subsequent adjustment steps, to estimate the correction factor for returns in the income intervals directly below $5,000 as well. The number of adjustments involving the shifting of returns to higher income classes made it essential to extend the income range studied to a point lower than $5,000 in order to avoid incomplete data in the final distribution above $7,500. The adjustments for deductions and tax-exempt interest in the income classes below $5,000 were inevitably very arbitrary, since the available tabulations of the income tax statistics included no data on sources of income and deductions for these classes. Hence it was necessary to assign estimated amounts of deductions and tax-exempt income to them. Otherwise the procedures used in adjusting this lower range were similar to those used for the levels above $5,000.

Returns reporting net deficits were not included in this analysis. Of the 94,609 returns with net deficits in 1935, it is estimated that less than 2,000 would fall in the positive income range immediately above $5,000 if the figures are adjusted to conform to the definition of net income used in the Study of Consumer Purchases.

c) *Assumptions underlying procedures*

Implicit in the method adopted to determine the point of shift used in deriving the adjusted income distribution was the assumption that each individual return within an income class reported average deductions and tax-exempt interest equal to the average amount prevailing for the class.

It is obvious that this assumption is in conflict with the facts as shown by tabulations presented in *Statistics of Income for 1935*. These tabulations indicate that only a portion of the returns in any given income class show entries for each of the individual items of income and deduction, and that, in the case of capital gains and losses at least, those returns that do report such items show widely varying amounts within the same income class.[19]

These data appear, at first, to suggest that a better adjustment might have been effected if the corrections for each item of deduction, for capital gains, and for tax-exempt interest had been carried through separately. The average amount of each item per return reporting the item could then have been estimated and used to determine the number of returns and the aggregate income shifting upward to the next higher income class, and, in the case of capital gains and losses, variable amounts of each item (as reported in *Statistics of Income*) could have been added to or deducted from the returns within an interval. Such a procedure, however, would have involved numerous difficulties, without any compensating assurance that the adjusted distribution would more nearly resemble the actual distribution of family units according to the 'adjusted' net income basis desired.

First, since the tabulations in *Statistics of Income* present the frequencies of returns reporting each type of income and deduction only for all groups of returns combined, it would have been necessary to estimate the distribution of the frequencies at each income level among the several types of returns, i.e., joint returns, separate returns of husbands, returns of single men not heads of families, etc.

[19] See *Statistics of Income for 1935*, pp. 18–20. Tables showing the frequency of specific amounts of deduction items reported at each net income class are available only for capital loss and business loss.

Second, the procedure would have required arbitrary judgments as to the allocation of each type of deduction and of capital gains and tax-exempt interest among the returns within each income class, inasmuch as the available tabulations do not indicate the extent of overlapping in the groups of returns showing the several items. There is no way to determine, for example, the extent to which the group of returns showing capital gains includes, or excludes, the group of returns in the same income class showing tax-exempt interest. Attempts to assign specific types of deductions, capital gains and tax-exempt income to different groups of returns within a given income class, in either equal or varying amounts, would have entailed a series of arbitrary judgments which might well have introduced even more error than the addition of the same average amount of the combined items to each return within an income class.

Third, the statistical procedure would have been extremely complicated by undertaking separate adjustments for the various income and deduction items, since it would have been necessary to keep track of the returns shifted upward from each statutory net income class as a result of each adjustment step. Those returns shifted upward from a given net income class as a result of adding deductions for interest paid, for example, would have to be considered together with the returns remaining in the income class in determining the shifts that would occur when a second adjustment, e.g., for addition of taxes paid, was made. The procedure would be further complicated by the fact that in the adjustment to subtract capital gains the returns would have shifted downward rather than upward.

In the light of these considerations, it was decided that a less complicated and less time-consuming procedure, involving a single adjustment for the several items, would be more satisfactory. It seemed better to combine all the deductions, capital gains, and tax-exempt income at a given income level, and to assign the same average amount to every return at that income level, rather than to venture into the maze of arbitrary decisions involved in any alternative procedure.

The procedure used probably tended to underestimate the net amount of additional income belonging to the returns in the upper portion of each net income class, and to overestimate the

amounts belonging to returns in the lower portion. Since the average amount of deductions, capital gains, and tax-exempt interest increases as we move up the income scale, and since the proportions of returns in each income class showing each type of deduction and capital gain also rise steadily as income increases, similar tendencies no doubt prevail within an income class.

But even if we accept this description of the bias introduced at particular income levels, it is extremely difficult to appraise the ultimate direction and magnitude of the bias introduced in the adjusted distributions of family units and aggregate family income. If the returns in the upper portion of each income interval had been arbitrarily assigned higher average amounts of deductions, capital gains, and tax-exempt income than those in the lower portion, the *average income* (net income plus additional amounts for deductions, etc.) of those returns shifting to the next higher bracket would, of course, have been raised. On the other hand, this procedure might very possibly have reduced the *number* of returns shifting, and hence have reduced both the *aggregate net income* and the *aggregate additional income* from deductions, etc., shifted to the higher level. The results are virtually indeterminate, until the exact basis of allocation of the income and deduction items is decided, and the calculations actually carried through.

It is to be regretted that the special tabulations of the 1936 income tax returns, as now planned, will not afford any satisfactory basis for judging the nature or the extent of the error introduced into the National Resources Committee estimates by the methods used in adjusting the net income classification to allow for these items of deduction, capital gains, and tax-exempt interest. The tabulations will show, for each income level and each type of return, the number of returns reporting each source of income and each deduction item, together with a frequency distribution of returns showing specified amounts of each item. Since the income classes used for these tabulations will be based on statutory net income excluding capital gains and losses, the problem of adjusting for these two items will be eliminated. But the problem of adding tax-exempt interest and the deduction items of interest paid, contributions, taxes paid, and 'other deductions' will remain. Tabulations of the three groups of returns

listed at the beginning of this section according to 'adjusted' net income classes—statutory net income minus capital gains, plus capital losses, interest paid, contributions, taxes paid, and 'other deductions'—would afford perhaps the only factual basis for appraising the results of the National Resources Committee procedures in adjusting the income tax data to allow for these items.

6 ADJUSTING TO 1935–36 BASIS

The distribution of family units obtained in the preceding steps was based entirely on income tax data for the calendar year 1935. This distribution was now adjusted to reflect the effects of the substantially larger national income received by American consumers during the fiscal year 1935–36. As the figures in Tables 3 and 4 indicate, this particular adjustment had a very significant effect on both the number of family units and the aggregate net income in the upper income ranges. Unfortunately, the available data and the methods used in making the adjustment were not geared to the importance of the task in hand.

Comparison of the income tax tabulations for 1935 and the preliminary data for the calendar year 1936 afforded some measure of the differences in the number of returns showing net incomes of $5,000 and over and in the aggregate income reported in the two years,[20] but they offered no clue as to how much of this change should be attributed to the continued expansion of the national income during the last half of 1936. The only available data bearing on this general question were the monthly estimates of national income paid out, prepared by the National Income Section of the Department of Commerce.[21] These estimates indicate a total national income of $62,441 million paid out during the calendar year 1936, representing a 13.6 per cent rise over the estimated amount for 1935. An estimate for 1935–36, based on monthly estimates for the last half of 1935 and the first half of

[20] These preliminary data differed only very slightly from the figures for 1936 subsequently published in *Statistics of Income*. The aggregate net income for returns with incomes of $5,000 and over, for example, was estimated at $8,713 million in the preliminary tabulations, while the final figure for this income range was $8,895 million.

[21] See R. R. Nathan and F. M. Cone, 'Monthly Income Payments in the United States, 1929–37', *Survey of Current Business*, February 1938.

1936, showed a 5.5 per cent rise over the 1935 figure, or 40.3 per cent of the total rise from 1935 to 1936.

The adjustment of the 1935 family distribution to a 1935–36 basis was made by relating these changes in the size of the national income paid out over this two-year period to the differences in the total number of returns and in the aggregate income reported for 1935 and 1936 on those individual income tax returns showing net incomes of $5,000 and over.

The lack of detailed breakdowns in the preliminary tabulations for 1936 made it impossible to carry through the same combinations and adjustments that had been made of the 1935 data and thus establish a direct relationship between the income distributions in 1935 and in 1936. Instead, the comparison was based on the difference in the aggregate income (statutory net income minus capital gains and plus deductions for capital loss, interest paid, taxes paid, contributions, and 'other deductions') reported by all types of returns with statutory net incomes of $5,000 and over in 1935 and 1936. This comparison indicated a total increase of 36.5 per cent from 1935 to 1936.

The assumption was now made that the increase in aggregate income (as defined above) between 1935 and 1935–36 would bear the same relationship to this total increase of 36.5 per cent that the increase from 1935 to 1935–36 in national income paid out bore to the total increase from 1935 to 1936. Accordingly, 40.3 per cent of the $2,458 million increase in aggregate income between 1935 and 1936 shown by all types of returns with net incomes of $5,000 and over was taken to represent the increase in aggregate income from 1935 to 1935–36.

Only part of this increase in national income, of course, accrued to income recipients belonging to family units. It was therefore necessary to divide it among the various groups of returns on some proportionate basis. The percentage distribution of aggregate income (as defined above) among the various types of returns in 1935 was used as the basis for this division. Since the available income tax data for 1936 were not classified by type of return, it was necessary either to accept the 1935 percentage relationship as between the group of returns of members of families (groups 1–5 and 8 as listed in Sec. III, 3) and the group of returns of non-members (groups 6, 7, and 9) as representative of

1935–36 also, or to attempt a purely arbitrary correction of the data. Subsequent comparison of the 1936 relationships with those for 1935 indicate sufficient similarity to justify the acceptance of the 1935 data as a basis for the division.[22]

That portion of the increased income attributable to returns filed by family members, $815 million, was now distributed by income level according to the percentage distribution of aggregate income shown by the family distribution for incomes of $5,000 and over derived from the 1935 income tax data. Again it seemed better, in the absence of a detailed income classification for the 1936 data, to accept the 1935 relationships than to attempt an entirely arbitrary adjustment. Subsequent comparisons of the 1935 and 1936 income tax data for all types of returns combined reveal a very marked similarity in the two percentage distributions.[23] The method may have overstated to some slight extent the proportions of the increased national income received by the income classes between $5,000 and $15,000, and to have understated slightly the proportion received by the income range between $15,000 and $1,000,000.

The additional amounts of aggregate income assigned to the various income levels by the procedure described above were then added to the aggregate amounts shown in the 1935 family distribution to obtain a distribution of aggregate family income for 1935–36.

The number of family units at each income level in the 1935–36 distribution was determined by dividing the 1935–36 aggregate income at each income interval by the average (mean) income within that interval, as shown by the family distribution derived from the 1935 data. This procedure was based on the assumption that there would be no significant change from one year to another in the distribution of family units within any given income interval. The validity of this assumption might be

[22] Of the aggregate net income reported in *Statistics of Income* for returns with net incomes of $5,000 and over, 82.35 per cent in 1935 and 82.19 per cent in 1936 represented the income of members of family units.

[23] Of the aggregate net income reported in *Statistics of Income* for returns with incomes of $5,000 and over, 37 per cent fell in the range $5,000–$10,000; 15 per cent, $10,000–$15,000; 9 per cent, $15,000–$20,000; 21 per cent, $20,000–$50,000; 9 per cent, $50,000–$100,000; and 9 per cent, $100,000 and over in 1935. The corresponding percentages in 1936 were 31, 14, 9, 22, 10, and 11.

questioned in the case of the very broad income intervals at the top of the income range, but comparisons made on the basis of statutory net income figures shown in the 1935 and 1936 *Statistics of Income* reveal a very great similarity in the average net income figures in identical income classes.

7 ADJUSTING FOR NONREPORTING AND UNDERSTATEMENT OF INCOMES

The necessity for adjusting the federal income tax data to allow for the understatement and the nonreporting of incomes has been generally recognized by economists seeking to use these data in arriving at a national distribution of income by size.[24] In every case, such adjustments have been predicated on essentially arbitrary assumptions concerning the probable prevalence and amount of understatement and nonreporting at different income levels. Since the particular assumptions adopted necessarily reflect subjective judgment rather than factual evidence, they are particularly subject to criticism.

The adjustments made by the National Resources Committee for understatement and nonreporting are no exception to this general rule. In approaching this problem the effort was made to obtain tentative estimates from tax students and others who were in a position to offer authoritative opinions based on an intimate knowledge of the problems involved. The results were far from satisfactory. Treasury officials, who were perhaps in the best position to have an informed judgment in the matter, were unable to furnish definite estimates. Estimates ventured by various persons ranged widely about those finally accepted.

However, the interviews did reveal a general agreement on certain aspects of the problem: (1) that the preponderance of understatement and nonreporting occurs in connection with income from fees, rents, profits, royalties and 'other income'; (2) that nonreporting is apt to occur more frequently at the low than at the high income levels, and tends to be negligible at income levels

[24] See, e.g., estimates for 1929 by Leven in Maurice Leven, H. G. Moulton, and Clark Warburton, *America's Capacity to Consume* (Brookings Institution, 1934), p. 167 and footnotes to Table 23; and estimates for 1918 by Macaulay in W. C. Mitchell, W. I. King, F. R. Macaulay, and O. W. Knauth, *Income in the United States* (National Bureau of Economic Research), I (1921), 109, 124, 130; and II (1922), 253–68.

above $20,000; (3) that understatement also tends to be relatively more frequent at the lower income levels but extends further up the income scale. The exact percentages applied by the National Resources Committee to correct for understatement and nonreporting reflect these composite opinions. The adjustments were made in two consecutive steps.

a) *Adjustment for nonreporting*

The correction for nonreporting was intended to account for the incomes of those families that are legally required to file income tax returns and fail to do so, as well as for the incomes received by state and local officials, whose salaries are not subject to federal income taxation.[25] The adjustment, which affected both the number of families and aggregate net income, was based on arbitrary estimates of the probable percentage increase in income tax returns if all families with incomes of $5,000 and over had filed returns on their incomes for the year 1935–36.

The assumption that most nonreporting is concentrated in the

[25] The number of state and local officers and employees whose salaries were exempt from the federal income tax in 1937 was estimated at 2,608,289, but only 16,206 of these persons had salaries above $5,000: see *Hearings before Committee on Ways and Means, House of Representatives*, 76th Cong., 1st Sess., Jan. 26, 1939, Tax-Exempt Salaries, Table 1, p. 26. The estimated number of state and local officers and employees in 1937, by salary classes, as presented in these *Hearings* by J. W. Hanes, Undersecretary of Treasury, is given below. The distribution would, of course, be higher if the tabulation were made on the basis of income classes, including income other than salaries, rather than on the basis of salary classes.

SALARY CLASSES	NUMBER	PERCENTAGE DISTRIBUTION
$1,000 and under	1,036,108	39.72
1,001– 1,500	544,770	20.89
1,501– 2,000	439,140	16.84
2,001– 2,500	323,797	12.41
2,501– 3,000	135,731	5.20
3,001– 3,500	53,395	2.05
3,501– 4,000	33,261	1.28
4,001– 4,500	18,527	.71
4,501– 5,000	7,354	.28
5,001– 6,000	7,231	.28
6,001– 7,000	3,313	.13
7,001– 8,000	2,174	.08
8,001– 9,000	1,242	.05
9,001–10,000	907	.03
Over $10,000	1,339	.05
Total	2,608,289	100.00

lower ranges and is negligible above $20,000 recognizes two considerations: (1) that the exempted salaries of state and local officials do not, for the most part, exceed $10,000; (2) that evasion of the income tax law through nonreporting tends to become increasingly difficult as incomes become larger. The specific set of percentages used for increasing the number of families and aggregate net income in the income classes between $5,000 and $20,000 are, of course, wholly arbitrary. The number of returns and aggregate income between $5,000 and $10,000 were increased 25 per cent, those between $10,000 and $15,000, 15 per cent; and those between $15,000 and $20,000, 5 per cent.

b) *Adjustment for understatement*

Like nonreporting, understatement of income was assumed to vary by income level and to be proportionately greater at the lower levels. This assumption recognized that returns showing higher incomes are probably based on more adequate accounts and are subject to a more careful audit by Treasury officials—both factors which would tend to discourage illegal understatement for the purpose of evading income tax payments. Specifically, it was decided that the aggregate income of families with incomes between $5,000 and $20,000 should be increased 15 per cent, that of families between $20,000 and $25,000, 10 per cent, and that of families between $25,000 and $50,000, 5 per cent.[28]

Although these percentages were applied to total income at the various levels, they were designed to reflect primarily the understatement of income from the four sources mentioned above: (1) business profits; (2) partnership profits; (3) rents and royalties;

[28] A direct comparison of these percentages and of those for nonreporting with the percentages used by Leven in the Brookings estimates for 1929 and by Macaulay in the National Bureau estimates for 1918 is not possible. Leven does not make separate adjustments for nonreporting and understatement. He indicates that a correction for underreporting and evasion was made by increasing the estimated number of income tax returns for business and professional incomes 65 per cent. As Merwin points out (Part One, Sec. II, 3, c) it is not clear whether the same percentage was used in correcting each income class above $5,000.

Macaulay's adjustments of the 1918 data included both an adjustment for farmers and small business men who filed no returns and an adjustment to allow for evasion by persons actually reporting. The exact percentages used in adjusting the data at different income levels are not shown, but the aggregate income reported on returns between $5,000 and $50,000 was increased $2 billion to allow for understatement of incomes at these levels. *Op. cit.*, II, 259.

(4) 'other income' (including income from all sources not specifically reported). The proportion of aggregate statutory net income on all types of returns in 1935 attributable to these four sources is shown by the tabulations in *Statistics of Income* to have declined as incomes increased above $5,000. Thus the proportion at the statutory net income class $5,000–$7,500 was 29 per cent, while that at class $40,000–$50,000 was 21 per cent. The additional amounts of income added at the several income classes to adjust for understatement represented increases of 59 per cent in the income from these four sources for the income class $5,000–$7,500 and 26 per cent for the income class $40,000–$50,000. The total amount added for understatement in the income ranges $5,000 to $50,000 was equal to approximately 50 per cent of the aggregate amount reported from these four sources of income by all returns showing net incomes of $5,000 and over.[27] These estimates of understatement do not take into account any legal evasions of income tax liability which may result in understatement at levels above $50,000. It is quite possible that this type of evasion increases rather than decreases as income rises, and the failure of the National Resources Committee estimates to make specific allowance for such understatement may tend toward an underestimate of the number of families and aggregate income in the very high income ranges.

The actual procedure of correcting for understatement differed from that used for nonreporting in that the number of returns was not increased, except as a result of returns shifting from the income class directly below $5,000. The total amount of income to be added at each income level to correct for understatement was calculated by applying the appropriate percentages to the aggregate income figures shown by the 1935–36 family distri-

[27] Since the correction for understatement discussed here applied only to the returns of members of family units, the percentages of understatement should preferably be related to the income reported from the four sources by those types of returns representing family members. However, data for sources of income are available only for all types of returns combined, including the returns of single individuals and of estates and trusts. The correction for understatement of family income from these four sources is therefore somewhat greater than 50 per cent. This figure of 50 per cent is inaccurate also because statutory net income classes are used here for the four sources of income, while the aggregate amount of understatement refers to income classes after the several adjustments described above had been made.

bution after the correction for nonreporting had been completed.

Following the procedure adopted in the case of the adjustment for deductions and tax-exempt interest, all the returns in each income class were assumed to have understated their incomes by the average amount prevailing for the entire class. The average understatement at each level was therefore determined by dividing the aggregate amount by the number of family units in the class. Addition of this average amount resulted in a shifting of some families from each income level to the next higher level. This shift and the corresponding shift in aggregate income were accomplished by the methods described above for adding deductions and tax-exempt interest to the net income distributions.

8 ADDING INCOME OF SUPPLEMENTARY EARNERS

As indicated earlier, the income tax statistics provided no information on the incomes received by non-dependent members of economic families other than wives. Yet to achieve comparability with the Consumer Purchases data, it was necessary to make some allowance in the family income distribution for the amounts contributed by such supplementary income recipients. Unfortunately, while the Consumer Purchases data included in the family income figures total income from all sources, entries for the individual family members pertained only to earnings. Hence the schedule data offered no adequate basis for estimating total income contributed by non-dependent income recipients. Because of this deficiency in the available data on supplementary income, and because the method otherwise tended, as explained below, to overestimate the average number of supplementary earners at the various income levels, no specific adjustment was made to allow for supplementary incomes other than earnings. The omission of supplementary income from rents, investments, royalties, pensions, etc., may result in a slight understatement of the aggregate income of family units.

Available tabulations from the Study of Consumer Purchases showed for individual sample communities the number of supplementary earners at each income level. These supplementary earners were classified into four types—husbands, wives, others 16 years and over, and others under 16 years. The average earnings for each type were also shown, by income level. Inasmuch as

the earnings of husbands, wives, and dependent children under 18 are required by law to be included as part of the family income —in a joint return, in the separate returns of husband and wife, or in a single return by the head of the family—the income tax data were presumably deficient only by the amount of the income received by the 18 year and over part of the supplementary earners of the third type, those persons 16 years and over other than husbands or wives.

Available tabulations of the Consumer Purchases data did not make it possible to segregate supplementary earners between the ages of 16 and 18 years, so that it was necessary to make the adjustment on the basis of the data for the entire group of supplementary earners (other than husbands and wives) over 16. The upward bias introduced by this procedure was, as observed earlier in the discussion, at least partly compensated for by the lack of any adjustment for supplementary income recipients who were not earners, or for income received by supplementary earners from other sources.

The adjustments for supplementary incomes were made on the basis of preliminary tabulations for eight large cities[28] included in the Study of Consumer Purchases. It would have been more desirable, of course, to have utilized data from all types of community, properly weighted to obtain national averages. This was not possible, and an examination of sample data for other communities indicated that the eight cities were not unrepresentative. From these sample data were calculated the average number of supplementary earners of 16 years and over for families in each income class up to $10,000, and the average earnings per supplementary earner in each class. By multiplying the average number of supplementary earners per family by the average earnings per supplementary earner, there was obtained for each income class up to $10,000 an average amount of supplementary earnings per family to be added to the incomes of the families in the 1935–36 family distribution.

The average amounts to be added at successive income classes above $10,000 were estimated by plotting the data for the classes below $10,000 and extending the curve freehand to read off the

[28] Data from Atlanta, Ga., Chicago, Ill., Columbus, O., Denver, Colo., New York, N. Y., Omaha, Nebr.-Council Bluffs, Iowa, Portland, Ore., Providence, R. I.

extrapolated values. The extrapolated values naturally showed a declining number of supplementary earners per family as incomes advance beyond $10,000. The average number of supplementary earners per family ranged from .38 at the income level $5,000–$7,500 to .17 at the level $10,000 and over. The average amount of supplementary earnings per earner ranged from approximately $1,000 to approximately $1,500. Whereas this seems plausible enough, in terms of earnings, the discrepancy between supplementary earnings and supplementary income probably becomes greater at the higher income levels, so that the correction tends toward a greater understatement of supplementary income at the top of the income range.

Once having determined, by the above means, the average amount of supplementary earnings to be added at each income level, it was possible to carry forward the adjustment by using the methods used in adding average deductions and tax-exempt interest and in adding the estimated average amounts necessary to correct for understatement of income.

Obviously, the data and procedures followed in adjusting for supplementary incomes had numerous shortcomings, but the adjustment as a whole had merely a minor effect on the national distribution.

9 ADDING IMPUTED VALUE OF NON-MONEY INCOME

A more substantial adjustment of the income tax distribution was necessary to allow for the imputed value of those types of non-money income covered by the estimated income distribution based on Consumer Purchases data. The value of home-produced food is probably a negligible item of income for most families reporting net incomes of more than $7,500 but the value of occupancy of an owned dwelling or dwellings is apt to be of considerable importance even in the upper income ranges, where the proportion of families owning their own dwellings is very high.

Consumption data collected in the Study of Consumer Purchases yielded data on the average value of non-money items of income at each income level up to $20,000 and over. These average amounts were added at each income level by the procedure used in preceding adjustments, with the distribution of families and of aggregate income shifting upward to allow for those fam-

ilies whose incomes were sufficiently increased by the added income to cause them to move into a higher income class. For the several income classes within the $20,000 and over range, it was necessary to resort to extrapolated figures read from a free-hand extension of a curve plotted from the data for lower income levels.

VI Correction of Preliminary Income Distribution based on Consumer Purchases Data

The addition of the imputed value of non-money items of income completed the series of adjustments of the income tax data, and yielded a distribution of family units and of aggregate income for income levels above $7,500 which was, within the limitations of the data and of the procedures adopted, on a comparable basis with the estimated national distribution built up from the sample income data collected in the Study of Consumer Purchases. The latter distribution, known to be deficient in the high income levels, was now corrected by adding at each income interval above $7,500 the additional number of families and amount of aggregate income that the adjusted income tax data indicated belonged in those income intervals. This correction, in effect, substituted above $7,500 the distribution based on corrected income tax data for the distribution based on sample data.

Since the population weights used in building up the estimated national distribution had included all families in the United States as of January 1, 1936, it was necessary to reduce the number of families in the income intervals below $7,500 to allow for the increased number of families in the higher income intervals. On the assumption that the sample data below $7,500 reflected accurately the relative proportions of families at the different income levels, i.e., that the tendency toward underrepresentation at the high income levels did not begin until the $7,500 level, the total reduction in the number of families below $7,500 was distributed among the various income intervals in proportion to the relative number of families in each interval before the correction was made.

These proportions were obtained by calculating a percentage distribution, by income level, of the total number of families be-

low the $7,500 level. The resulting percentages were applied to the total number of families to be subtracted from the distribution below $7,500 (that is, the number added above $7,500) to obtain the number of families to be subtracted from the various income intervals. The aggregate income at each interval below $7,500 was, of course, decreased in proportion to the decrease in the number of units at that interval.

As Table 2 indicates, the substitution of the adjusted income tax distribution for the Consumer Purchases distribution for income levels above $7,500 raised the proportion of families with in-

TABLE 2

COMPARISON OF ESTIMATED NUMBER OF FAMILIES HAVING INCOMES BETWEEN $7,500 AND $10,000, AND INCOMES ABOVE $10,000, BASED ON CONSUMER PURCHASES DATA AND ON FEDERAL INCOME TAX DATA, 1935–1936

	DISTRIBUTION OF FAMILIES BASED ON:			
	CONSUMER PURCHASES DATA		FEDERAL INCOME TAX DATA	
INCOME CLASS	NUMBER	PERCENTAGE OF ALL FAMILIES [1]	NUMBER	PERCENTAGE OF ALL FAMILIES [2]
$7,500–$10,000	71,394	0.24	187,060	0.64
10,000 and over	66,562	.23	283,791	.97
Total	137,956	.47	470,851	1.61

[1] The total number of families was estimated in *Consumer Incomes in the United States* to have been 29,400,300; see that report, Tables 1 and 3.

comes of $7,500 and over from 0.47 to 1.61 per cent. It is unfortunate that a similar comparison in terms of aggregate income is impossible, since an estimate based on Consumer Purchases data of aggregate family income for the $7,500 and over range was not prepared; the percentage increase in aggregate family income as a result of the substitution would, of course, have been greater than the percentage increase shown in Table 2 for the number of families.

The use of $7,500 as the lower limit of the income range for which the adjusted income tax distribution was substituted for the Consumer Purchases distribution is perhaps open to some question, because of the possibility that underrepresentation of high incomes in the Consumer Purchases data may have extended somewhat below the $7,500 level. Unfortunately, the income range common to the two family distributions was fairly narrow. In view of the marked deficiencies of the adjusted income tax dis-

tribution below the $7,500 level, there seemed little to be gained by adopting any compromise method of splicing the two distributions, such as was used in the case of the distributions for single individuals.[29]

VII Summary of Results of Various Adjustments

The results of the various adjustments in the income tax data are summarized in Tables 3–5. Table 3 summarizes the changes in the aggregate income of members of family units with incomes of $7,500 and over; Tables 4 and 5 compare the distributions, by income level, resulting from the series of adjustments of the data. These tables present the figures only for the income range above $7,500. Although the series of adjustments extended to lower income classes, the comparisons have been confined to the income range for which an adequate distribution was available after the final adjustment had been made. Data for the income classes immediately below $7,500 were incomplete because of the shifting of frequencies and of aggregate income from one income level to the next higher level as the series of adjustments was carried through.

1 CHANGES IN AGGREGATE INCOME

Table 3 shows the aggregate income of the $7,500 and over income range before and after each type of adjustment, and the increase in income resulting from each step. The aggregate income of members of family units reporting statutory net incomes of $7,500 and over was reported in *Statistics of Income* as $3,712 million. As a result of the series of adjustments, the aggregate income of families with 'adjusted' net incomes of $7,500 and over was $8,030 million, an increase of approximately 116 per cent.

[29] The distributions for single individuals were spliced at the $3,000 income line, and the curves for single men and women with incomes between $3,000 and $5,000, based on sample data, were smoothed to conform more closely with the curve shown by the adjusted income tax data; see *Consumer Incomes in the United States*, pp. 69, 87.

TABLE 3

SUMMARY OF CHANGES IN AGGREGATE INCOME OF MEMBERS OF FAMILY UNITS WITH INCOMES OF $7,500 AND OVER, RESULTING FROM SUCCESSIVE ADJUSTMENTS OF DATA FROM FEDERAL INDIVIDUAL INCOME TAX RETURNS FOR 1935

TYPE OF ADJUSTMENT	AGGREGATE INCOME BEFORE ADJUSTMENT	INCREASE DUE TO ADJUSTMENT [1]	AGGREGATE INCOME AFTER ADJUSTMENT
	(millions of dollars)		
Individual returns as reported in *Statistics of Income* [2]			
Joint returns and returns of male and female heads of families	1,911		
Separate returns of:			
Husbands	1,125		
Wives	392		
Community property returns	284		
Total	3,712		
Adjustment for net capital gains, deductions from gross income, and interest from tax-exempt securities			
Joint returns and returns of male and female heads of families	1,911	632	2,543
Separate returns (incl. community property returns) of:			
Husbands	1,330	263	1,593
Wives	471	103	574
Total	3,712	998	4,710
Pairing separate returns of husbands and of wives (incl. community property returns)	2,167	338	2,505
Adjustment from 1935 to 1935–36 basis (joint returns, returns of heads of families, paired returns of husbands and wives, and community property returns)	5,048	659	5,707
Adjustment for:			
Nonreporting	5,707	423	6,130
Understatement	6,130	1,154	7,284
Income from supplementary earners	7,284	312	7,596
Imputed value of non-money items of income	7,596	434	8,030

[1] The amounts listed in this column can, in most cases, be divided into the part due to the adjustment 'proper', and the part due to the shifting of returns or of family units from income classes below $7,500 as a result of the adjustment. The latter amounts were estimated at $359 million in the adjustment for deductions added to

The $4,318 million added by the adjustments of the data was distributed as follows: $998 million, or 23 per cent of the total amount, resulted from the adjustment made to subtract net capital gains, and to add the various types of deductions allowed on the income tax returns and the tax-exempt interest from wholly or partly tax-exempt securities; $338 million, or 8 per cent, from the pairing of the separate returns of husbands and wives to form family units; $659 million, or 15 per cent, from the adjustment of the 1935 data to a 1935–36 basis; $423 million, or 10 per cent, from the adjustment for nonreporting of incomes; $1,154 million, or 27 per cent, from the adjustment for understatement of incomes; $312 million, or 7 per cent, from the addition of income of supplementary earners; and $434 million, or 10 per cent, from the addition of the imputed value of non-money items of income.

In almost all the adjustments, the amount by which the aggregate income above $7,500 was raised includes more than the amount attributable to the particular income items that were being added to the distribution, that is, the increase in aggregate income due to the adjustment for capital gains, deductions, etc., was more than the total amount of deductions and tax-exempt income added to the group having statutory net incomes above $7,500. Similarly, the increase due to the adjustment for understatement of incomes was more than the estimated aggregate understatement for this income range. A relatively large part of the increase in aggregate income resulting from each adjustment step represents the income of those returns which are shifted upward from below the $7,500 level as a result of the adjustment. The exact amounts added because of these shifts are indicated in footnote 1 to Table 3. In instances where the assumed average amount of correction, e.g., the average amount of deductions or

(footnotes to Table 3 concluded)

joint returns, at $58 million for deductions added to separate returns of husbands, and at $32 million for deductions added to separate returns of wives. All the $338 million added by the combination into husband-wife units represented the aggregate income of returns of husbands and of wives whose combined income brought them up into the range above $7,500. The increases due to the adjustments for understatement of incomes, for income from supplementary earners, and for imputed value of non-money items of income included $609, $214, and $211 million, respectively, which represented the aggregate income of returns shifted upward from below the $7,500 line.

[2] *Statistics of Income for 1935*, Part I, Table 5.

of understatement, was relatively large for the income class directly below $7,500, the number of returns shifting upward, and hence the aggregate income of the group shifting, was also large. Thus in the case of the adjustment for deductions and tax-exempt interest, almost one-half of the increase in aggregate income above $7,500 represented the statutory net income of returns shifting from below the $7,500 line plus their aggregate deductions and tax-exempt interest. The same is true of the adjustment for imputed value of non-money items of income. The aggregate amounts added as a result of the adjustments for understatement of incomes and for income from supplementary earners included even larger proportions representing the income of returns shifting upward; in the latter case, the amount added as a result of the shift is more than twice the amount of supplementary income added to the distribution above $7,500.

Confining the discussion to the income added for specific adjustment items, it is interesting to note that the estimated $545 million added for understatement of incomes is only slightly lower than the $549 million added to allow for deductions and tax-exempt interest (less capital gains) reported by the net income classes above $7,500, but that the distribution of these amounts among the several income levels is very different. Whereas an average amount of deductions and tax-exempt interest was added to returns at *each* income level—the amount ranging from approximately $1,250 at the income level $7,500–$10,000 to as high as $185,000 in the case of joint returns and returns of heads of families, and to $630,000 in the case of separate returns of husbands, at the income level $1,000,000 and over—an average amount of understatement was added at only *seven* income levels above $7,500. In this case, the average amount of the correction item showed much less variation, ranging from about $1,250 for the income level $7,500–$10,000 to $2,250 for the income level $40,000–$50,000.

The average amount added for income from supplementary earners decreased as income rose, ranging from approximately $300 at the income level $7,500–$10,000 to $100 at the levels above $25,000. Average amounts added for the imputed value of non-money items of income varied in the opposite direction, increasing relatively rapidly as income increased. Average amounts

added ranged from $350 at the income level $7,500–$10,000 to $25,000 at the income level $1,000,000 and over.

The correction for nonreporting was made only for three income levels above $7,500. Here, as in the adjustment to a 1935–36 basis, where a correction was applied at every income level, the average income within an income class remained unchanged, and the increase in the aggregate income was due entirely to the increase in the number of family units in the income range above $7,500.

Of the seven types of adjustment, it appears that the aggregate income added by three, namely, the adjustment for net capital gains, deductions from gross income, and interest from tax-exempt securities, the adjustment for income from supplementary earners, and the adjustment for imputed value of non-money items of income, may have been too low. As noted above, the first of these adjustments fails to take account of several items of income that were excluded from gross income as defined by the provisions of the 1934 Revenue Act. The second adjustment, by correcting for earners rather than income recipients, by adding only a nominal amount at the very high income levels, and by omitting entirely the incomes reported on the returns of single men and women not heads of families, doubtless understated the amount of supplementary income received by family units in the upper income ranges. The value of non-money items of income in 1935–36 for these income classes has been estimated in a forthcoming report of the National Resources Committee[30] at a slightly higher figure than the total amount added here for this adjustment factor. In the case of the other types of adjustment, notably those for understatement, nonreporting and the difference in year covered, it is difficult to estimate whether they tended to overstate or to understate the amounts added to the aggregate income.

Certain of the adjustment steps seem to have introduced elements of bias into the distribution of aggregate income among the various income classes, thereby affecting the degree of equality of the income distribution. Thus the method adopted for pairing the separate returns of husbands and wives may very possibly have resulted in too great a degree of inequality in the resulting

[30] *Consumer Expenditures in the United States: Estimates for 1935–36.*

income distribution of husband-wife units, which would be reflected in the final distribution.

The methods used in the addition of deductions and tax-exempt interest, on the other hand, led to a bias toward too great a degree of equality in the distribution. The correction for supplementary earnings and the lack of adjustments for possible evasions of income tax liability at the high income levels in the correction for understatement may have tended toward this same result. It does not seem feasible to estimate the relative influence of these conflicting tendencies on the final income distribution.

2 CHANGES IN FREQUENCY DISTRIBUTION

For the convenience of persons interested in following, in detail, the effects of the adjustment procedures, the actual frequency distributions obtained at various stages of the adjustment process are presented in Table 4, and the corresponding percentage distributions in Table 5. Returns of members of family units showing statutory net incomes of $7,500 and over in 1935 numbered 211,374. The number of family units with incomes in this dollar range was raised, as a result of the series of adjustments, to a total of 470,851, an increase of almost 123 per cent. The addition of allowable deductions and of tax-exempt interest, items actually reported on the income tax returns, and the correction for understatement of incomes were primarily responsible for the movement of family units into this income range.

3 SUGGESTIONS FOR IMPROVED RESULTS

It seems likely that analyses of the income tax data similar in scope to that made by the National Resources Committee will be undertaken in the very near future. The experience of the National Resources Committee is of significance, not only as a means of evaluating the 1935–36 estimates of income distribution, but also because it suggests several ways in which improvements in basic data would make for improvements in methodology and in results.

a) *Individual income tax returns*

As already mentioned, additional tabulations of federal individual income tax returns, which would avoid the necessity for cer-

TABLE 4

FREQUENCY DISTRIBUTIONS BY INCOME LEVEL OF MEMBERS OF FAMILY UNITS WITH INCOMES OF $7,500 AND OVER, AFTER SUCCESSIVE ADJUSTMENTS OF DATA FROM FEDERAL INDIVIDUAL INCOME TAX RETURNS FOR 1935

INCOME CLASS	DISTRIBUTIONS OF INDIVIDUAL RETURNS AS REPORTED IN *Statistics of Income* [1]				DISTRIBUTIONS OF RETURNS AFTER ADJUSTMENTS FOR NET CAPITAL GAINS, DEDUCTIONS FROM GROSS INCOME, AND INTEREST FROM TAX-EXEMPT OBLIGATIONS			DISTRIBUTION OF HUSBAND-WIFE UNITS AFTER PAIRING SEPARATE RETURNS OF HUSBANDS AND OF WIVES (INCL. COMMUNITY PROPERTY RETURNS)	DISTRIBUTION OF FAMILY UNITS
	JOINT RETURNS AND RETURNS OF MALE AND FEMALE HEADS OF FAMILIES	SEPARATE RETURNS OF: HUSBANDS	SEPARATE RETURNS OF: WIVES	COMMUNITY PROPERTY RETURNS	JOINT RETURNS AND RETURNS OF MALE AND FEMALE HEADS OF FAMILIES	SEPARATE RETURNS (INCL. COMMUNITY PROPERTY RETURNS) OF: HUSBANDS	SEPARATE RETURNS (INCL. COMMUNITY PROPERTY RETURNS) OF: WIVES		
$7,500– $10,000	60,722	9,331	4,509	6,092	81,000	14,750	7,800	18,205	99,205
10,000– 15,000	42,449	10,853	4,643	5,188	59,000	16,550	7,300	17,825	76,825
15,000– 20,000	14,852	6,252	2,459	2,070	17,000	8,450	3,300	12,388	29,388
20,000– 25,000	6,940	3,891	1,421	1,085	8,500	5,100	2,000	8,250	16,750
25,000– 30,000	3,617	2,659	867	614	4,800	3,350	1,250	6,362	11,162
30,000– 40,000	3,401	3,261	1,052	708	5,200	4,550	1,550	6,450	11,650
40,000– 50,000	1,587	1,799	626	310	1,800	2,550	750	3,670	5,470
50,000– 100,000	1,774	3,026	880	496	2,945	4,450	1,400	5,375	8,320
100,000– 250,000	320	926	278	77	405	1,150	325	2,266	2,671
250,000– 500,000	54	140	48	10	40	150	60	555	595
500,000–1,000,000	9	48	12	7	13	80	18	158	165
1,000,000 and over	7	16	6	*	9	20	9	58	61
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

INCOME CLASS	DISTRIBUTION OF FAMILY UNITS	DISTRIBUTIONS OF FAMILY UNITS AFTER ADJUSTMENT FOR: CHANGE FROM 1935 TO 1935–36 BASIS	NONREPORTING	UNDERSTATEMENT	INCOME FROM SUPPLEMENTARY EARNERS	IMPUTED VALUE OF NON-MONEY ITEMS OF INCOME [2]
$7,500– $10,000	99,205	112,161	140,201	163,060	178,460	187,060
10,000– 15,000	76,825	86,858	99,887	117,209	123,995	131,821
15,000– 20,000	29,388	33,226	34,887	50,812	53,913	58,487
20,000– 25,000	16,750	18,938	18,938	29,608	31,398	34,208
25,000– 30,000	11,162	12,620	12,620	19,883	20,812	22,233
30,000– 40,000	11,650	13,172	13,172	14,094	14,415	15,561
40,000– 50,000	5,470	6,184	6,184	6,464	6,495	6,603
50,000– 100,000	8,320	9,407	9,407	10,272	10,293	10,571
100,000– 250,000	2,671	3,020	3,020	3,020	3,039	3,336
250,000– 500,000	595	673	673	673	675	699
500,000–1,000,000	165	187	187	187	187	197
1,000,000 and over	61	69	69	69	69	75
Total	262,262	296,515	339,245	415,351 [1]	443,251 [1]	470,851 [1]

[1] *Statistics of Income for 1935*, Part I, Table 5.
[2] This distribution appears as the 'tail' of the income distribution of families presented in Table 3 of *Consumer Incomes in the United States*.

TABLE 5

PERCENTAGE DISTRIBUTIONS BY INCOME LEVEL OF MEMBERS OF FAMILY UNITS WITH INCOMES OF $7,500 AND OVER, AFTER SUCCESSIVE ADJUSTMENTS OF DATA FROM FEDERAL INDIVIDUAL INCOME TAX RETURNS FOR 1935 [1]

INCOME CLASS	DISTRIBUTIONS OF INDIVIDUAL RETURNS AS REPORTED IN *Statistics of Income* [2]				DISTRIBUTIONS OF RETURNS AFTER ADJUSTMENTS FOR NET CAPITAL GAINS, DEDUCTIONS FROM GROSS INCOME, AND INTEREST FROM TAX-EXEMPT OBLIGATIONS			DISTRIBUTION OF HUSBAND-WIFE UNITS AFTER PAIRING SEPARATE RETURNS OF HUSBANDS AND OF WIVES (INCL. COMMUNITY PROPERTY RETURNS)	DISTRIBUTION OF FAMILY UNITS
	JOINT RETURNS AND RETURNS OF MALE AND FEMALE HEADS OF FAMILIES	SEPARATE RETURNS OF: [4] HUSBANDS	WIVES	COMMUNITY PROPERTY RETURNS	JOINT RETURNS AND RETURNS OF MALE AND FEMALE HEADS OF FAMILIES	SEPARATE RETURNS (INCL. COMMUNITY PROPERTY RETURNS) OF: HUSBANDS	WIVES		
$7,500– $10,000	44.72	22.11	26.84	36.57	44.82	24.12	30.29	22.32	37.82
10,000– 15,000	31.28	25.73	27.64	31.14	32.65	27.06	28.34	21.86	29.29
15,000– 20,000	10.94	14.81	14.64	12.43	9.41	13.82	12.81	15.19	11.21
20,000– 25,000	5.11	9.22	8.46	6.51	4.70	8.34	7.76	10.12	6.39
25,000– 30,000	2.67	6.30	5.16	3.69	2.66	5.48	4.85	7.80	4.26
30,000– 40,000	2.51	7.73	6.26	4.25	2.88	7.44	6.02	7.91	4.44
40,000– 50,000	1.17	4.26	3.73	1.86	1.00	4.17	2.91	4.50	2.09
50,000– 100,000	1.31	7.17	5.24	2.98	1.63	7.28	5.43	6.59	3.17
100,000– 250,000	.24	2.19	1.65	.46	.22	1.88	1.26	2.78	1.02
250,000– 500,000	.03	.33	.29	.06	.02	.25	.23	.68	.23
500,000–1,000,000	.01	.11	.07	.04	.01	.13	.07	.19	.06
1,000,000 and over	.01	.04	.02	.01	[3]	.03	.03	.06	.02
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

INCOME CLASS	DISTRIBUTION OF FAMILY UNITS	DISTRIBUTIONS OF FAMILY UNITS AFTER ADJUSTMENT FOR:				
		CHANGE FROM 1935 TO 1935–36 BASIS	NONREPORTING	UNDERSTATEMENT	INCOME FROM SUPPLEMENTARY EARNERS	IMPUTED VALUE OF NON-MONEY ITEMS OF INCOME
$7,500– $10,000	37.82	37.82	41.34	39.25	40.27	39.72
10,000– 15,000	29.29	29.29	29.14	28.22	27.97	28.00
15,000– 20,000	11.21	11.21	10.28	12.23	12.16	12.42
20,000– 25,000	6.39	6.39	5.58	7.13	7.08	7.27
25,000– 30,000	4.26	4.26	3.72	4.79	4.58	4.72
30,000– 40,000	4.44	4.44	3.88	3.89	3.25	3.30
40,000– 50,000	2.09	2.09	1.82	1.56	1.47	1.40
50,000– 100,000	3.17	3.17	2.77	2.47	2.32	2.25
100,000– 250,000	1.02	1.02	.89	.73	.69	.71
250,000– 500,000	.23	.23	.20	.16	.15	.15
500,000–1,000,000	.06	.06	.06	.05	.04	.04
1,000,000 and over	.02	.02	.02	.02	.02	.02
Total	100.00	100.00	100.00	100.00	100.00	100.00

[1] Based on Table 4.
[2] *Statistics of Income for 1935*, Part I, Table 5.
[3] Less than 0.005 per cent.

tain arbitrary assumptions, would prove of great assistance to persons endeavoring to derive an income distribution of family units in the upper income brackets. Most important of these, perhaps, is a tabulation of the matched separate returns of husbands and wives, classified by their combined net incomes. Such a tabulation, on the basis of net income classes exclusive of capital gains and losses, is included in the project of the Treasury Department for the 1936 and 1937 returns and it is to be hoped that tabulations will continue to be made for future years. A similar tabulation of the community property returns of husbands and wives would make it possible to omit the arbitrary division of the income between husbands and wives, and the pairing of the returns into family units that was necessary in the National Resources Committee study.

For other types of returns as well, the special tabulations on the basis of net income exclusive of capital gains and losses will prove of great help, as will those assigning the various income and deduction items to the several groups of returns. The problem of adding other types of deduction as well as tax-exempt interest to the returns within each net income class, however, will still remain. As suggested earlier, a tabulation of the income tax returns on the basis of 'adjusted' net income classes (statutory net income plus the five types of deductions and minus capital gains) would be highly desirable, but one unlikely to be undertaken by the Bureau of Internal Revenue. An analysis of the error in the reported amounts of tax-exempt interest on the tax returns would make possible a more accurate adjustment for this factor. One of the most arbitrary adjustments made in the National Resources Committee estimates, the correction for nonreporting and understatement, could, of course, be greatly improved were it possible to obtain more definitive data on the extent to which these types of underreporting prevail. Unfortunately, accurate information in this field is about impossible to obtain.

b) *Sample income data*

If the primary objective in the collection of sample data on family incomes is to obtain a distribution of family incomes by size, using the income tax data for the upper income levels, it is obvious that the period covered by the two sets of data should be as

nearly as possible identical, and, therefore, that the sample income survey should be made on a calendar year basis. In this way an arbitrary correction of the income tax data to allow for the difference in reporting period, such as was made in the National Resources Committee study, can be avoided.

The more arbitrary aspects of the adjustment for supplementary family income could also be avoided, to a considerable extent, if the schedules recorded separately, where possible, incomes of supplementary income recipients from all sources, not just their earnings. A minor improvement would be possible if the tabulations of such supplementary income were made for persons over and under 18, rather than 16, years of age. Tabulations of the sample data on supplementary incomes and imputed value of non-money items of income for separate income levels above $10,000 would afford a somewhat better guide than was available in this study for estimating the amounts of such income to be added at the very high levels.

It would also add to the reliability of the final distribution if it were possible to correct statutory net income, as reported in *Statistics of Income*, not only for capital gains, allowable deductions and tax-exempt interest, but also for certain other items included in total family income as defined in the Study of Consumer Purchases. This might be accomplished if the sample schedules and the tabulations isolated, at least for families above $5,000, certain items of income that are specifically excluded from gross income by law; for example, incomes composed entirely or largely of state and municipal salaries, income from sources outside the United States, and amounts received through accident or health insurance under workmen's compensation acts.

Discussion

I A. J. GOLDENTHAL

To those interested in evaluating the reliability of estimates of the frequency distribution of income, this paper comes as a refreshing departure from earlier studies. For the first time we have not only a complete and detailed description of the statistical procedures followed in the construction of a distribution, but also an analysis of the limitations of the various adjustments. Any elaboration of this comprehensive and painstaking statement of methods and limitations may seem superfluous; but a brief comment on a few points in the analysis, by way of adding emphasis, seems desirable. In addition, advantage will be taken of the opportunity to put forward several suggestions.

1 COMBINING RETURNS OF HUSBANDS AND WIVES

As indicated by the authors, one of the most difficult problems confronting them was the task of pairing the separate income tax returns of husbands and wives as a step in obtaining family incomes. The procedure adopted embodied the extreme assumption that the husband with the largest income is married to the wife with the largest income, the husband with the next highest income to the wife with the next highest income, and so forth. The authors' discussion of this supposition seems inadequate. Inasmuch as the method of combining the separate returns of husbands and wives will to a large extent[1] determine the aggregate income and the number of families in the upper income brackets, and as these have a significant effect on estimates of savings based on the income distribution, some further analysis of the validity of this assumption seems desirable.

[1] Of the 3,492 families with incomes of $100,000 and over, 3,025 are the result of pairing the separate returns of husbands and wives. These figures are before adjustments for the difference in period, nonreporting, etc. (see Table 4).

The choice of this method of combining the separate incomes of husbands and wives is predicated on the general assumption that husbands and wives filing separate returns endeavor to divide their total incomes as evenly as possible in order to avoid the heavy surtaxes prevailing in the high income brackets. The possibility that similar social and economic status might lead high-income husbands to marry high-income wives is also mentioned.

Considerable division of income between husband and wife doubtless has taken place in order to lower the tax charge. Indeed, analysis of federal income tax data reveals that in the higher income brackets the proportion of all returns that are filed separately by wives has increased substantially over the last two decades. However, there are many influences at work that should be examined before deciding how the incomes of husbands and wives are likely to be related.[2] Among these are the present gift tax which acts so as to prevent to a considerable extent the division of income between husband and wife; [3] the vigilance of the Bureau of Internal Revenue in examining transfers of property from husband to wife or vice versa with the view of determining whether the transfer is bona fide; the impossibility of legally dividing the non-property income of one spouse, such as salaries and fees; the fact that the source of a considerable number of high incomes is a large capital gain which may have resulted from transactions involving property legally owned by the husband or the wife and, therefore, part of his or her taxable income; and the reluctance of many wealthy individuals to lose control over their property. One could cite numerous instances of common knowledge where a high-income husband or wife is married to a spouse of moderate income with the likelihood of any substantial division of income being slight.

In addition to the above considerations which seem to indicate

[2] The following discussion is not intended to apply to community property returns. The reported incomes of husband and wife in the eight states having the community property law are more nearly equal than in the other states. Probably a different procedure should be followed in matching the separate returns of these eight states. It should be realized, however, that because of the exclusion of certain income from the community property provisions, the reported incomes of husbands and wives in these states are not necessarily equal, though for many couples this is the case.

[3] See Mabel Newcomer, 'Estimate of the Tax Burden on Different Income Classes', in *Studies in Current Tax Problems* (Twentieth Century Fund, 1937), p. 37.

that the facility with which income is divided between husband and wife has been exaggerated, there is statistical evidence on the subject, none of which seems to support the assumption adopted. The substantial number of large incomes in the Bureau of Internal Revenue classification headed 'joint returns of husbands, wives, and dependent children and returns of either husband or wife when no other return is filed' is in itself evidence that high incomes in many cases are not divided between husband and wife. From this it follows that even when separate returns are filed the incomes need not be divided as equally as possible and that a high-income husband is not always married to a high-income wife.

More direct information on this matter is available from the *Statistics of Income for 1916*. While the data are probably not entirely pertinent because of the time interval that has elapsed, the manner in which the separate returns of husbands and wives were tabulated in this issue of *Statistics of Income* does throw some light on how their incomes are related. For that year the return of a wife filing separately was placed in the combined income class of husband and wife. The husband's return also was put in this class. By comparing the average size of the combined income in a given class with that of the wives in the same class, one obtains some idea of the division of income between husband and wife in that year. The data indicate that for the higher income classes the average income of the wife was but a small fraction of the combined income of husband and wife. Thus for the income class $1,000,000 and over, which contained 86 couples, the wives' average income was less than 9 per cent of the average of the combined income of husbands and wives. Under the assumption adopted in the study of the National Resources Committee, the income of a wife would be, in this income bracket, almost one-half of the total income of husband and wife. Undoubtedly a greater proportion of women had independent income in 1935–36 than in 1916. Moreover, the rise in the surtax rates since 1916 has increased the incentive to divide the income within the family. Taking into account both these factors, it is nevertheless quite unlikely that the relation between the incomes of husbands and wives has changed as much as the procedure in this study assumes. It should perhaps be mentioned in connection

with the relevance of these data that in 1916 the income tax law had been in effect for four years, that the surtax rates, while small when compared with those of subsequent years, did rise to 13 per cent, and that no gift tax was levied.

The most important body of information on the pairing of the separate incomes of husband and wife are the tabulations of the 1936 Wisconsin individual income tax returns contained in Volume I of the Wisconsin series.[4] Although Miss Baird and Miss Fine warn readers (footnote 12) against drawing conclusions from the Wisconsin study, it does appear that these tabulations can serve to indicate the relationship of the separate returns of husbands and wives. As the authors point out, the reporting requirements of the federal income tax law and of the Wisconsin law differ. Under the Wisconsin law separate returns are required whenever both husband and wife are income recipients; in contrast, the federal law provides that the husband may include his wife's income with his own and file a joint return or they may file separately. However, this difference does not greatly impair the usefulness of the tabulations for the present purpose. If the combined income of a couple is in the federal surtax brackets, separate returns will generally be filed under both the federal and Wisconsin laws. The one exception is when one of the couple has a deficit, in which event a joint return would probably be filed under the federal law and separate returns under the Wisconsin law.[5] Aside from this exception, it is virtually certain that if either spouse is in the surtax brackets, separate returns will be filed under both income tax laws.

Inspection of Table 7.0 of Volume I of the Wisconsin series reveals that the wives of husbands with high incomes are widely

[4] *Wisconsin Individual Income Tax Statistics: 1936 Income*, Vol. I, *Tax Analysis*. The results of this study were not available when the National Resources Committee estimates were prepared.

[5] This would not always be true. Because of the unlimited deduction of capital losses under the Wisconsin law as compared with the $2,000 limitation the federal law imposes and because of the exclusion and deduction of certain types of income (chiefly the exclusion of income from property outside Wisconsin and the deduction of dividends received from Wisconsin corporations and federal income taxes paid), it is quite likely that an individual might have a deficit under the Wisconsin law but a positive net income under the federal law. Furthermore, it is stated in Vol. I of the Wisconsin series that "although married couples, each having income, should file separate returns, this practice is not always followed" (p. A108).

dispersed throughout the income range. Curiously enough the table shows that none of the husbands in the income class of $100,000 and over is mated with a wife in the income class of $50,000 and over. As an experiment, the method followed in the National Resources Committee estimate was applied to the separate returns of husbands and wives filed in Wisconsin for 1936. The resulting distribution was then compared with that of the paired incomes of the same husbands and wives in Table J (p. 19) of Volume I. The application of the National Resources Committee method of combining the separate returns of husbands and wives yielded 47 per cent more couples with incomes of $100,000 and over than were shown in Table J.[6] There was also a 65 per cent increase in the aggregate income of this class. Though the number of Wisconsin returns in the high income brackets is small[7] and there may be some question concerning the representativeness of the Wisconsin data, it seems reasonable to accept these findings as roughly comparable with those which would be obtained by treating the federal income tax data in a similar fashion.

In the light of the preceding discussion the unavoidable conclusion seems to be that a less extreme procedure would have more accurately combined the incomes of husbands and wives. As a consequence of the method adopted in the National Resources Committee estimate the number of couples in the high income brackets is overstated. To a greater degree the same is true of aggregate income. Consequently, the number of families in the middle-income brackets is too small. The results of the Treasury tabulation of the 1936 returns, which will show the sep-

[6] This is an understatement since those returns in which one spouse had a deficit were eliminated from the data. As mentioned above, many of those with a deficit under the Wisconsin law would not have a deficit under the federal law and should, therefore, be included in the comparison.

[7] There were 15 couples with incomes of $100,000 and over, excluding those with a deficit for one spouse. If the analysis is extended to the lower income brackets the following results are obtained: the percentage increase in the number of couples as determined by the National Resources Committee method, over the comparable figure in Table J, is 17 per cent for the $50,000 and over class and 15 per cent for the $20,000 and over class. The percentage increases in the aggregate income are 27 and 19, respectively. Returns were filed by 67 couples with net taxable incomes of $50,000 and over and by 302 with incomes of $20,000 and over. Interpolation within the rather broad income classes of Table 70 may be the source of some error, which, however, is not believed to be serious.

arate returns of husbands and wives paired into family units, will indicate the extent of the necessary revisions.

2 ADJUSTMENTS FOR DIFFERENCES IN INCOME CONCEPTS

The inclusion in the federal income tax data of realized capital gains and losses has proved to be a source of difficulty for those statisticians who wished to exclude such income from their distributions. In the previous size distribution estimates no attempt was made to eliminate this type of income either because of the intention of the investigator to include it, or, if the desire was to exclude capital gains and losses, because of the impracticability of any adjustment.[8] In the National Resources Committee estimate the attempt was made to exclude all realized capital gains and losses from the income tax data.[9] The exclusion of capital gains and losses was accomplished together with addition of the five deduction items and tax exempt interest in the following manner: the aggregate amount of the five types of deduction plus tax-exempt interest minus capital gains was added to each income level. Then, by assuming that each return within an income class reported the class average of these items, certain proportions of the returns of each class were shifted to adjacent income classes if the addition of the average amounts increased the size of the incomes sufficiently.

Because of the nature of capital gains, the question arises as to the extent of the bias imparted to the final distribution by this procedure. It has long been known that capital gains are often sporadic and large and that this type of income is one of the chief sources of the large incomes reported in *Statistics of Income*. Abundant data have recently become available that reveal to what extent this is true.

Table 7 of *Statistics of Income for 1935* indicates that only a portion of the returns in each income bracket, varying from one-half of the returns with net income of $1,000,000 and over to one-seventh of those in the $5,000 to $6,000 class, report income from capital gains. Furthermore the 1935 *Statistics of*

[8] On this point see the remarks of Clark Warburton, *Studies, Volume One*, pp. 98–9.
[9] This adjustment, however, is not in accord with the income concept of the study which included realized capital gains and losses on assets bought and sold within the given year; see below.

Income text table (p. 18) cross-classifying net capital gain by net income shows that the size of the capital gain varies widely within an income class and that a great many returns report a capital gain large enough to constitute a substantial proportion of net income. Selecting the $100,000 to $150,000 class as an example the following data may be cited: The average net capital gain for the 1,395 returns in this group was $11,450. Examination of the table reveals no tendency for the returns in this income bracket with a net capital gain to cluster about this average. For the 712 returns reporting a capital gain, the average was $22,700. Of these, 192 had a capital gain of above $25,000 and 38 a gain of $100,000 and over. The Wisconsin data are also informative in this connection. In 1936 16 per cent of the returns with statutory total incomes of $5,000 and over reported a capital gain as a principal source of income.[10]

The use of average amounts in the adjustment for capital gains may considerably distort the distribution, especially in the upper income brackets. In contrast to the National Resources Committee method which shifts all returns to a slightly lower income level, a procedure based on the distribution of capital gains would have redistributed a portion of the returns throughout the income scale, while the rest would not be moved at all. Such an adjustment could have been accomplished in this study by treating capital gains separately. While, as the authors indicate, it is impracticable to adjust individually for each item to be added to or deducted from net income, it does seem feasible to adjust separately for the exclusion of capital gains. With the use of the text table in *Statistics of Income for 1935* cross-classifying net capital gain by net income, returns reporting capital gains could be transferred to their appropriate income class. Average amounts of the other items could be added to these returns.

The income concept adopted in the National Resources Committee frequency distribution includes realized capital gains and losses on assets bought and sold within the schedule year. However, in the treatment of the income tax data no attempt was made to incorporate such gains or losses. That these gains

[10] Text Table G (p. 21) Vol. IV A of the Wisconsin series. The largest item on a single and double source return and the two largest items on a multiple source return are defined as principal sources. Capital gains in excess of $5,000 have been included as principal sources.

would be fairly large may be inferred from a special Treasury tabulation for 1934 of capital gains and losses classified according to the length of time the capital asset was held. This tabulation shows that for those with net incomes of $5,000 and over the total of the net capital gains on assets held one year or less was equal to two-thirds of the statutory net capital gain of the same income group.[11] While the concept of capital gains on assets held one year or less is more inclusive than a concept of gains on assets bought and sold within a calendar year, the amount under the latter concept would be fairly large. On the other hand, some capital losses should have been included. The Treasury tabulation cited above indicates that for returns of $5,000 and over, the aggregate net capital loss from assets held one year or less amounted to one-half of the total statutory net capital loss for this income group. For the year 1935–36, the net result of the failure to take these two items into account is to understate the income of those in the upper income brackets as well as to place many families and individuals in the wrong income class.

In the above comment on the method of passing from statutory net income to the income concept of this study, the adjustment for capital gains has been singled out largely because it was thought that the assumption upon which the entire shift in income concepts was based is weakest for this item. However, the general conclusions with respect to exclusion of capital gains apply, though with less force, to addition of tax exempt interest and the five types of deductions. Table 7 of *Statistics of Income* shows that only a portion of the returns—larger, however, than in the case of capital gains—report each type of deduction. It is possible that an analysis of the Wisconsin tabulations may be fruitful in providing a basis for appraising the procedure employed in the passage from net income to the desired income concept. The 1936 Wisconsin returns are already tabulated according to 'taxable net income', roughly comparable to the 'net income' concept of the federal income tax data, and according to an 'income bracket' concept that approximates the concept in the National Resources Committee study. The effect by income classes of transforming the Wisconsin distribution from a classification by

[11] *Statistics of Income for 1934*, Supplement, Sec. II, 'Capital Gains and Losses', Table I (U. S. Treasury Department).

net taxable income to one by income bracket may be compared with the effect of the similar adjustment for income concepts made in the study under consideration. However, careful examination of the differences in the income items involved in the two adjustments will be necessary. Since this suggested analysis will probably be the only method available in the near future for evaluating this aspect of the National Resources Committee estimates, it is desirable that it be undertaken.

3 NONREPORTING AND UNDERSTATEMENT OF INCOMES

Sweeping adjustments of an essentially arbitrary nature for nonreporting and understatement of incomes have invariably followed painstaking and time-consuming statistical treatment of income tax data in the construction of the earlier distributions. Such a sequence has always seemed anomalous. It is also present in the study under consideration. The call by Miss Baird and Miss Fine for more definitive data on the extent to which these types of understatement prevail brings to mind F. R. Macaulay's suggestion of seventeen years ago for a universal and compulsory census of incomes in which the giving of false information would be severely punished. From the very nature of the information desired it is virtually impossible to obtain it directly. Nevertheless, if the reliability of frequency distributions of income is to be improved, some basis for adjusting income tax statistics superior to that of expert opinion is urgently needed. The only checks on the present method of making these estimates are the opinions of other experts, which vary widely, and independent estimates of the size of the aggregate income of all families and individuals. Segregating those sources of income most likely to be understated, such as fees, rents, profits from business, royalties and other income, is a step in the proper direction, but unfortunately data necessary to determine the degree of understatement at the various income levels are lacking.

It may be that progress in dealing with this problem can be achieved by classifying the income tax returns by occupation and industry,[12] and then making separate estimates for nonreporting

[12] Recent issues of *Statistics of Income* present a size distribution of net profit or loss from business in a rather broad industrial classification (Table 8). Information for recent years from income tax returns on the occupational distribution of in-

and underreporting for each occupation and industry. Independent information on the incomes of an occupation or industry would provide the basis for these adjustments. Even though such information may be quite meager, this procedure should be more satisfactory than one involving over-all estimates for the entire distribution.

The recent passage by Congress of a law subjecting the salaries of the employees of state and local governments to federal income taxation has eliminated for the immediate future the necessity of including these income recipients in the allowance for nonreporting. However, sufficient data seem to be available to construct a tolerably accurate size distribution of the salaries of non-federal government employees for 1935–36.[13] If this were done it would have the desirable effect of reducing the area covered by the estimate for nonreporting.

Another of the unknown quantities in size distribution estimates is the influence of legal evasion on income tax data. The absence of quantitative knowledge of this factor virtually precludes the possibility of ascertaining the direction and extent of the bias that may characterize an income distribution. The Treasury undoubtedly has information on the prevalence, in the past, of the various methods for reducing income.[14] An investigation of the Treasury information should indicate the importance of this factor for frequency distributions of income. Provided the data do not disclose individual incomes it may be possible to secure this information from the Treasury Department.

The National Resources Committee staff has accomplished the formidable task of transforming an original distribution with aggregate income of $3,712 million to one with $8,030 million. The inadequacy of the data in relation to the assignment con-

come seems to be confined to the Wisconsin data (Vol. III). However, the 1916 *Statistics of Income* did present an occupational classification by income classes (Table 6c). The Treasury also made a special tabulation of the incomes of dentists for 1929.

[13] The Division of Tax Research of the Treasury has constructed such a distribution. See *Hearings before a Special Committee on the Taxation of Governmental Securities and Salaries*, U. S. Senate, 76th Cong., 1st Sess., p. 724. This distribution is presented by Miss Baird and Miss Fine in footnote 25.

[14] See *Hearings before the Committee on Ways and Means—Tax Evasion and Avoidance*, 75th Cong., 1st Sess., especially pp. 24–33.

fronting the estimators has necessitated several procedures that are open to question. Further investigation of their validity is advisable. Fortunately, valuable data on some of the steps in the adjustment will become available in the near future. This information as well as more intensive analysis of existing data may indicate that revisions in the original estimate are needed. However, as stated by the authors, there are important gaps in our statistical information that projected studies will not fill.