THE SIZE DISTRIBUTION OF HOUSEHOLD DISPOSABLE WEALTH IN THE UNITED STATES

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In this study, new estimates are presented of the size distribution of household wealth in the U.S. in 1969. Compared to previous studies, its major advance is the inclusion of all marketable or discretionary household assets and liabilities and their alignment with national balance sheet totals. Household disposable wealth (HDW) is defined as the sum of all marketable or fungible assets held by households less liabilities. The Gini coefficient for HDW is 0.72, the share held by the richest one percent of households is 31 percent, and the share held by the top five percent is 49 percent. There is, however, a large variation in the concentration of different household assets. The Gini coefficient is 0.30 for household durables and inventories, 0.69 for equity in owner-occupied housing, 0.94 for bonds and securities, and 0.98 for corporate stock. HDW is then divided into two mutually exclusive components. The first, called "life-cycle wealth," is defined as the sum of equity in owner-occupied housing, durables, household inventory, demand deposits and currency, and the cash value of life insurance and pensions less consumer debt. This form of wealth tends to be accumulated over the life-cycle for either consumption, liquidity, or retirement purposes. The second, called "capital wealth," is the sum of time and savings deposits, bonds and securities, corporate stock, business and investment real estate equity, and trust fund equity. Life-cycle wealth is substantially less concentrated than capital wealth. The Gini coefficient for it is 0.59, while that for capital wealth is 0.88. Moreover, among the lower wealth groups, over 80 percent of household wealth takes the form of life-cycle wealth, whereas among the top wealth groups the proportion is under 20 percent. The results suggest substantially different savings motivations between the two groups.

Four sources of microdata have been used to study the size distribution of household and personal wealth in the United States. The first is federal estate tax data. These consist of official probate records which are filed with the federal government and which serve as the basis for the assessment of estate taxes. Samples are available for various years, but only decedents with wealth sufficiently high to pay taxes are included. Under certain assumptions about mortality by age, sex, and other demographic characteristics, the number and property of decedents can be translated into the size distribution of wealth among the living. The first researcher to use the estate-multiplier method for the U.S. was Horst Menderhausen (in Goldsmith (1956)). The first major study from these data was made by Lampman (1967). Two more recent studies based on this source are contained in Smith (1974) and Smith and Franklin (1974).

A second data source is the Survey of Consumer Finances conducted by the Survey Research Center of the University of Michigan. These surveys have been made periodically, with the first survey done in 1950. The sample size usually runs about 3,500 spending units and therefore there is limited detail on the top wealth groups. Lansing and Sonquist (1969) present results from these surveys for years 1953 and 1962.

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A third source of data is a specially designed survey of household assets and liabilities, called the Survey of Financial Characteristics of Consumers (SFCC). The SFCC was based on direct questionnaire response, with a sample of 2,557 consumer units. The sampling frame was stratified in favor of the rich, and the household balance sheet was valued as of December 31, 1962. Projector and Weiss (1966) provide an overview of the method and sampling frame used, as well as a comprehensive report of the findings.

A fourth source of data is a synthetic database called MESP, which was specially created for the analysis of household wealth. Briefly, it consists of a sample of 63,457 households with information on earnings, income, wealth holdings and debt as of 1969 and demographic characteristics as of 1970. The sampling frame is the 1970 Census 1/1,000 Public Use Sample. A statistical matching procedure was used to assign federal (Internal Revenue Service) tax returns to each household in the sample which was estimated to have taxable income. All asset values, with the exception of owner-occupied housing, which was already recorded in the Census data, and all liability values were imputed to each household on the basis of the microdata. For some assets, such as stocks and bonds, corresponding income flows (dividends and interest, respectively) were "capitalized" to estimate the asset value (see Lebergott (1976) for a description of capitalization techniques). For other items, outside information was relied upon, and more complex imputation techniques were used. Household balance sheet information was then aligned with national balance sheet estimates of the household sector. The method and construction of the MESP database is documented in Wolff (1980) and Wolff (1982), and a short description of MESP will be provided in section I below.

Two sets of issues will be addressed in this paper. The first is statistical in nature. Three kinds of limitations have been noted in connection with the first three of these data sources. The first is incomplete coverage of the population. This is particularly so for estate tax data, where only the top five percent or so of decedents are included. The SFCC has the best coverage, since its sampling frame was expressedly designed to study household wealth. The second problem is in asset coverage. All three of these data sources are missing some kind of household wealth. Here, again, the SFCC probably has the most complete coverage of asset types, but even it excludes pensions, consumer durables except automobiles, and household inventories. The third difficulty is that many assets and liabilities in the microdata base fail to sum to the aggregate national balance sheet total for the household sector. This is particularly troublesome with survey data. Projector and Weiss (1966, p. 61) report that only 51 percent of savings accounts, 55 percent of U.S. government securities, 59 percent of state and local government securities, 79 percent of corporate stock, and 58 percent of installment debt of the household sector was captured by the SFCC. With estate tax data, the population coverage is not complete, so the sample assets should sum to less than the aggregate balance sheet total. However, because the population coverage is partial, it is difficult to determine independently the extent of underreporting.

In section II below, I shall investigate the extent to which the second and third types of errors described above bias estimates of the concentration of

household wealth. The MESP dataset will be used for this analysis, since it was expressedly designed to provide full coverage of the population and of assets and liabilities and to align with national balance sheet totals. The Gini coefficient and the holdings of the top wealth groups will be used to measure the concentration of household wealth. An estimate will be made for the full MESP database, and this compared with estimates from the MESP database which reflect the asset and liability coverage of estate tax data and the SFCC. In addition, an estimate will be provided which reflects the underreporting of the SFCC. It might be expected that the exclusion of household durables and inventories will bias upward the estimate of wealth inequality, since these assets are equally distributed. Moreover, the underreporting of financial assets will probably bias downward these estimates, since financial assets are highly concentrated. It should be noted at the outset that the MESP database is itself subject to other kinds of errors, particularly those resulting from statistical matching and imputation techniques. However, these two kinds of errors should not affect the tests for bias, unless there is a systematic relation between these errors and the degree of concentration by asset type. Results reported in Wolff (1982) suggest that such a relation does not exist or, if it does, it is relatively weak.

The second set of issues is substantive in nature. The household balance sheets of the MESP database have now been extended to encompass the full set of assets and liabilities recorded in the national balance sheet accounts as developed by Ruggles and Ruggles (1980). In addition, the assets and liabilities in the household balance sheets of MESP are fully aligned to the national balance sheet totals. All assets and liabilities are recorded at current market value, and all entries are either directly marketable by households or "fungible." (For example, the cash surrender value of a life insurance policy may be borrowed against by a household without surrendering the policy.) This concept of wealth may be called "household disposable wealth" (somewhat analogous to personal disposal income), since it represents the portion of wealth over which households have *discretion*. In particular, household disposable wealth or HDW excludes non-tradeable or non-saleable accumulation rights such as "social security wealth" (see Feldstein (1974 or 1976) or Feldstein and Pellechio (1979)) and most forms of pension wealth. These two forms of wealth are really entitlements controlled by an outside party and their disposition is not at the discretion of the individual household.[1]

Five issues will be investigated in section III. First, how concentrated is HDW, particularly in comparison to household income or labor earnings? Second, which asset types and wealth components are more concentrated and which less concentrated, and how much of this is due to its ownership by a small part of the population and how much to its relative inequality among owners? Third, how does the level of wealth vary by income and the age of the head of household? Fourth, how does the composition of wealth differ by wealth, income, and the age of the household head? Fifth, is it possible to find clear divisions between the forms of wealth held by different classes in society?

[1]The exception is certain pension plans with a cash surrender value (see below).

I. An Overview of the MESP Database

The MESP database is a synthetically constructed dataset showing the assets and liabilities of a representative sample of 63,457 American households in 1969.[2] The database is formed from three statistical matches involving Census Public Use Samples and Internal Revenue Service tax return data and from two sets of imputations. The database, as a result, contains not only balance sheet information but detailed demographic information as well.

The primary database and sample frame of the MESP database is the 1970 state 15 percent Census 1/1000 Public Use Sample (PUS). To this data set was matched information from three other data sets: the 1970 Internal Revenue Service Tax Model (IRS70), the 1969 Internal Revenue Service Tax Model (IRS69), and the 1970 state 5% Census 1/1000 Public Use Sample (PUS5). Asset and liability information was then imputed to each household based on its extended set of demographic and income data. This balance sheet information was then adjusted to align with national balance sheet estimates of household wealth.

A. *The Statistical Matches*

Three statistical matches were performed to construct the MESP database.[3] The first was a match of IRS70 to IRS69. This match was used to transfer information on the race and age of the head of household on each tax return and detailed information on deductions—in particular, on the amount of mortgage interest and other interest paid and the real estate taxes paid.[4] For the match, the two files were first divided into four cohort groups: males under 65, males 65 or over, females under 65, and females 65 or over. The joint filers were also divided into four cohorts: both under 65, both 65 or over, husband under 65 and wife 65 or over, and husband 65 or over and wife under 65. Each of these groups was then subdivided again, depending on the number of children in the family. Tax returns within each of these finely divided groups were then matched between the IRS69 and IRS70 file, depending on how close the two records were with respect to the following thirteen items: (1) Adjusted gross income (AGI), (2) Wage and salary earnings/AGI, (3) Interest income/AGI, (4) Long-term capital gains/AGI, (5) Rental income/AGI, (6) Dividends/AGI, (7) Farm income/AGI, (8) Trust income/AGI, (9) Royalty income/AGI, (10) Business and professional earnings/AGI, (11) Pension income/AGI, (12) Property sale gains/AGI, (13) Total deductions/AGI. Race, age and itemized deductions were then transferred from the IRS70 record to the corresponding IRS69 record.

[2]The acronym MESP stands for the Measurement of Economic and Social Performance, the name of the project in which the database was created. The sample is 0.1 percent (1/1000) of all households in the U.S. Assets and liabilities are valued as of the end of 1969.

[3]See Ruggles and Ruggles (1974) and Ruggles, Ruggles, and Wolff (1977) for a full description of the matching technique.

[4]Normally, the tax return contains no information on race or age, except whether the filer and his spouse are over 65 in age. However, a special 1970 tax return file was created by the Internal Revenue Service with the cooperation of the Social Security Administration, containing the race and age of each filer based on his Social Security number.

The second and major match was that of the "augmented" IRS69 file to the PUS file. The purpose of this match was to combine the detailed income information of the IRS69 file to the detailed demographic information of the PUS. Moreover, the PUS contains information on the value of the owner-occupied housing as well as stock of durables held. The two files were first divided into cohort groups on the basis of the following four characteristics: (1) Marital status (single vs. married), (2) Sex (for singles), (3) Age of the head of household, (4) Race of the head of household. Within each cohort group the two files were matched depending on how close the two records were with respect to the following six characteristics: (1) Number of children, (2) Home-owner vs. renter, (3) Wage and salary earnings, (4) Business earnings, (5) Farm income, (6) Total income. The detailed income information, as well as data on itemized deductions, was then transferred from the IRS69 file to the PUS file.

The last match was that of the PUS5 file to the PUS. The reason for this match was that the PUS file contains information on automobile ownership while the PUS5 file has information on the televisions, radios, clothes washers and driers owned by each household. The two files were first divided into cohorts on the basis of the following five variables: (1) Marital status, (2) Age of head of household, (3) Sex of head of household, (4) Race of head of household, (5) Home-owner vs. renter. Records from the two files were matched depending on how close they were with respect to the following five characteristics: (1) Number of children, (2) Value of property or gross monthly rental, (3) Wage earnings of head of household, (4) Wage earnings of spouse, (5) Total family income. Information on the stocks of consumer durables was then transferred from the PUS5 file to the PUS.

B. *Alignment of Income Flows*

Alignment was done in two steps. First, the *number* of households receiving each income type was aligned to the number of tax returns reporting the type of income. Moreover, in the case of farm income, business and professional income, partnership income, small business corporation income, rental income, ordinary and capital gains (or losses), royalty income, and estate and trust income, this was done *separately* for profits and for losses.[5] The household unit, of course, differs from the tax unit, and there are two possible sources of bias in this alignment procedure. The first is that a given household may file more than one tax return.[6] The second is that some households may not file any tax return. Since these two biases tend to offset each other, I made the rather straightforward assumption that the same percentage of households received a given income type as the percentage of tax return units. Second, the actual values were then aligned to the total income flows as reported in *The Statistics of Income, 1969* (Internal Revenue Service (1971)). This was done by multiplying each income

[5]See Internal Revenue Service (1971), Table 1.8, pp. 29–32.

[6]There were 75.8 million personal tax returns filed in 1969 but only 63.5 million households. This means that if tax return entries were *independent* within household, a higher percentage of households who filed at least one tax return would report a given income type than of tax return units. Of course, if there was any positive correlation between income tax returns, then the percentage of households might be lower than that of tax return units.

entry by a scalar for the given income category. For the income categories listed above with separate totals for profits and losses, the alignment was done separately for each.

C. *The Construction of Household Balance Sheets*

The next step was to build up asset and liability information for each household. Except for the value of owner-occupied housing there are no estimates of household wealth holdings in the Census data. Imputations therefore had to be performed for the different components of household wealth. The imputation procedures differed across asset type and liabilities.

Before the imputation techniques are described, it is first necessary to present the aggregate balance sheet for the household sector, since all imputations are aligned to these totals. This is shown in Table 1. The format of the table follows very closely the accounting framework developed in Ruggles and Ruggles (1980, Table 2.40) and the estimates, unless otherwise indicated, come from this source.[7] The assets are divided into three groups. The first consists of tangible assets, including owner-occupied housing, other real estate holdings, consumer durables, and household inventories of semi-durables. Thirty-five percent of all assets owned by households in 1969 fell into this group. The second group is composed of fixed-claim assets, including demand deposits and currency, time and savings deposits, bonds, securities and other financial instruments. In 1969, this group made up 22 percent of household assets. The third group is equities, including corporate stock, equity in unincorporated businesses and trust funds, and the cash-surrender value of insurance and pension funds. This group comprised 44 percent of household assets. Household liabilities are also divided into three types: (1) mortgage debt, (2) consumer credit, and (3) other debt, including notes secured by non-real-estate assets. The difference between total assets and total debt is household net worth or household disposable wealth (HDW). In 1969, the overall household debt-to-equity ratio was 0.16.

Each asset and liability item in the MESP database was aligned with the national totals reported in Table 1. The actual imputation techniques were as follows:

1. *Owner-occupied housing.* House values were provided in the PUS, though they were coded in 11 intervals. The midpoint of each interval was used, except for the last, open-ended interval of $50,000 or more. For this a value of $77,538 was chosen so that the total would agree with the aggregate balance sheet.

2. *Investment real estate holdings.* Net rental income is reported in the IRS tax return data. A simple capitalization procedure was not possible here, since some of the income reported was negative. In general, gross rents and cost rise

[7]The balance sheet figures reported here represent new estimates prepared by Ruggles and Ruggles (and therefore differ from those reported in Wolff (1980)). Most of the figures in the two sets are close, except for owner-occupied housing and the "other real estate" category. The major difference is in the measurement of the value of land held by households, where the earlier estimates reflect previous work done by Raymond Goldsmith and the later estimates are based on Federal Reserve Board Flow of Funds figures.

TABLE 1

AGGREGATE NATIONAL BALANCE SHEET OF HOUSEHOLD WEALTH FOR THE U.S., 1969, BY ITEM[a]
(in billions of dollars)

Item		Value
I. Assets	3366.0	
A. Tangible Assets	1214.1	
1. Owner-occupied Housing		651.3
2. Other Real Estate		131.4
3. Automobiles		96.2
4. Other Consumer Durables		244.4
5. Inventories		90.8
B. Fixed Claim Assets	720.0	
1. Demand Deposits and Currency		104.8
2. Time and Savings Deposits		381.4
3. Federal Securities		101.6
4. State and Local Government Securities		35.5
5. Corporate and Foreign Bonds, Mortgages, Open Market Paper, Other Instruments		96.6
D. Equities Held	1431.9	
6. Corporate Stock		627.6
7. Farm Business Equity		202.7
8. Unincorporated Non-farm Equity		355.7
9. Trust Fund Equity		132.8
10. Insurance (Cash Surrender Value)		106.0
11. Pensions (Cash Surrender Value)		7.0
II. Liabilities	451.1	
1. Mortgate Debt		276.5
2. Consumer Credit		137.7
3. Other Debt		40.9
III. Net Worth (HDW)	2910.9	

[a]Primary source: Ruggles and Ruggles (1980), Tables 2.34 and 2.40. The split between owner-occupied housing and other real estate, as well as total real estate, and the split between automobiles and other forms of consumer durables were from Bureau of Economic Analysis worksheets provided by John Musgrave.

with the value of the property.[8] Thus, the greater the discrepancy between gross rents and costs, the higher, in general, the value of the property. As a result, I capitalized net rental income into real estate value proportional to the absolute value of the net rental income so as to align with the aggregate national balance sheet.[9]

3. *Consumer durables.* Ownership information was provided for some durables in the PUS.[10] Both a greater coverage of durables and some means of imputing *dollar values* to the stock of durables was needed. To do this, I used

[8]The cost includes such items as utilities, repairs and maintenance, mortgate interest, property taxes, and depreciation.

[9]It was also implicitly assumed that all real estate not owner-occupied was rented out. This is, of course, not necessarily true, since some of it, particularly unimproved land, is held for capital gains. Our procedure thus overstates the concentration of investment real estate ownership, though *a priori* there is no reason to suspect any systematic relation with respect to relative income or wealth position.

[10]In particular, for automobiles, washers and dryers, dishwashers, television and radios.

the 1960–61 Bureau of Labor Statistics Consumer Expenditure Survey (CES).[11] The procedure was as follows:

a) I imputed the ownership of durables not already contained in the PUS inventory by first computing the percentage of households in different demographic groups who purchased the durable in 1960–61 (from the CES). I obtained information on the service life of each durable. It was assumed that the percentage who purchased the durable was constant over the service life of the durable and I randomly assigned ownership of the durable for each demographic group based on these percentages. This procedure also gave the age of the durable in 1969.

b) I then regressed the purchase price of each durable on the demographic characteristics of those households buying the durable (from the CES). I used the regression results to impute a purchase price to each durable owned by families in the MESP database.

c) From a straight-line depreciation schedule, a current market value was next imputed to each durable based on the estimated age of the durable and the durable's service life.

d) Finally, the total market value of the durables in the MESP database was aligned to the national balance sheet totals by adjusting the value of each durable by a constant multiplier.

4. *Household inventories.* Household inventories are the stocks of semi-durables, including food, tobacco, alcohol, and clothing. These are differentiated from durables in that their useful life-span is considerably shorter, usually one year or less. I estimated household inventories on the basis of the annual purchase of these items by households. From CES data, the percent of household before-tax income spent on semi-durables was estimated by income class in 1960–61. It was then assumed that household expenditure patterns remain invariant over time with respect to *absolute* income levels,[12] and these percentages were used to impute inventory holdings. Finally, the household balance sheet entries were aligned to the national totals.

5. *Currency and demand deposits.* No information was available in the MESP sample on currency or demand deposit holdings by families. I therefore relied on regression results from Projector and Weiss (1966, p. 85), as follows:

$$\text{Head under 35:} \quad \log(DD) = 0.75 + 0.50 \log(A)$$

$$\text{Head 35–54:} \quad \log(DD) = 0.84 + 0.49 \log(A)$$

$$\text{Head 55–64:} \quad \log(DD) = 0.75 + 0.52 \log(A)$$

$$\text{Head 65+:} \quad \log(DD) = 0.91 + 0.48 \log(A)$$

where log is logarithm, DD is currency plus demand deposits and A is the sum of liquid and investment assets. The resulting estimates were then aligned with the national balance sheet total.

6. *Interest-bearing time and savings deposits and securities (except State and Local Government obligations).* In the IRS tax return data, interest on time and

[11]The more recent 1972–73 Consumer Expenditure Survey was not available at the time.

[12]That is to say, Engel curves by commodity type were assumed to depend on a family's real income, rather than on its income relative to overall mean income.

savings deposits is not distinguished from that on bonds, notes, and other fixed-claim financial securities. Moreover, because of federal law, interest on securities issued by state and local governments is not subject to federal income tax and is therefore not included in reported interest. (A separate imputation was performed for these securities.) Time and savings deposits and interest-bearing securities (except state and local government obligations) were first combined into one group. The average yield for this whole group was 3.4 percent (19.6/579.6), which was used to capitalize the interest into asset values. To split time and savings deposits from financial securities, I used the following regression results from the Survey of Financial Characteristics of Consumers (Projector and Weiss (1966), p. 85):

Age of Head		
under 35	$\log(TD)$:	$-0.36+0.97\log(A)$
35–54	$\log(TD)$:	$-0.15+0.92\log(A)$
55–64	$\log(TD)$:	$0+0.87\log(A)$
65+	$\log(TD)$:	$0.06+0.87\log(A)$

where TD is the sum of time and savings deposits and A is the sum of liquid and investment assets (demand deposits and currency, time deposits, bonds and other securities, corporate stock, investment real estate, and business equity). I then imputed a value to time and savings deposits for each household *receiving* interest income based on its assets.[13] Total time and savings deposits were then balanced with the aggregate balance sheet total of 381.4 billion. The residual was then used as the estimate of bond and other security holdings by household.

7. *State and Local Government obligations.* Since interest on these securities is not reported in federal tax returns, outside information was again required. In Projector and Weiss (1966, Tables A-12 and A-33), data are available on the ownership of state and local government bonds by (1962) income class and the ratio of the mean value of bonds held by families in each income class (for those who owned bonds) to the mean family income in the income class. As to be expected for tax reasons,[14] state and local bond ownership was highly dependent on income level and was highly concentrated in the upper income classes. The imputation was performed by randomly selecting households within each income class[15] based on the probability of owning these securities and then assigning each of these a value based on the family's income and the mean ratio

[13]If the imputed value for time deposits exceeded the first-round sum of time deposits and financial securities, TD was set equal to the original sum.

[14]Since state and local governments bonds usually have a substantially lower yield than other taxable securities, only upper income classes with high marginal tax rates would benefit from their ownership.

[15]As for household inventories, it was assumed that behavior with respect to purchases of state and local bonds depended on absolute income level rather than relative income level.

of state and local bonds to income by income class. The results were then aligned to the aggregate balance sheet total of 35.5 billion.

8. *Corporate securities.* Dividends received from corporate equities are recorded in the IRS tax return data. The average yield was 2.7 percent (16.9/627.6), which was used to capitalize dividends into corporate stock holdings.

9. *Farm business equity.* Net profit from unincorporated farm business is reported in the IRS tax return data. Like net rental income, both positive and negative entries occur. I therefore used the same procedure as for real estate holdings, and capitalized the absolute value of net income into unincorporated farm equity.

10. *Unincorporated non-farm equity.* The same procedure was applied for this as for farm business equity. Three income sources from the IRS tax return data were included in the base for this imputation: (1) net business and professional income, (2) partnership net income, and (3) small business corporation (subchapter S) net profit.

11. *Trust fund equity.* Estates and trusts net income is reported in the IRS tax return data. Because there were some losses reported in this income category (though their occurrence was very minor), I used the same capitalization technique as for business equity.

12. *Insurance (cash surrender value).* There are two main types of life insurance policies held by households. The first is usually called "term insurance" and provides only for a payment of a set amount (the "face value") contingent on the death of the insured party. The second is usually referred to as "full life insurance" and consists of two components. The first is a term insurance policy component, and the second is, in effect, a savings account component. A policy holder can thus accumulate equity in a full life insurance policy, and at any point in time this policy has a "cash surrender value." Since the equity portion of the policy is fungible either through cancellation of the policy or by borrowing against the cash value, it should be treated analogously to any other equity held by households.

There are no direct data provided in the MESP sample on life insurance policies. The imputation thus involved the use of outside data sources. There were essentially two steps involved. The first was the determination of who holds life insurance policies and what are the face values. For this I relied on data compiled in a study by the Life Insurance Marketing and Research Association and the American Council of Life Insurance (referred to as LIMRA-ACLI(1978)). There are two key demographic variables of interest in the imputation. The first is the age of the policy holder, since the equity portion of the life insurance policy varies with age. The second is the income level of the family, since the face amount of policies shows a strong correlation with family income. Crosstabs were provided showing the relation between age,[16] family income, insurance ownership, and face value (coverage). These distributions were then used as the marginal totals to construct a three-way matrix of life insurance

[16]To be consistent with the other imputation procedures, I used the age of the head of household to assign policy ownership.

coverage by age and income class.[17] Policy coverage was then assigned randomly within age and income class by using the midpoint of the coverage intervals for the closed intervals and a value of $200,000 for the open-ended interval.

The second step was to determine the relation between the equity portion and the face value of life insurance policies. A special study was commissioned by the Internal Revenue Service and carried out by the Institute of Life Insurance in 1971. Summary results are provided in Internal Revenue Service (1976). As was to be expected, there was a very strong correlation between this ratio and the age of the policy holder. These ratios were then used to convert the face values of policies into cash surrender values,[18] and the total cash surrender value of life insurance was aligned with the 1969 balance sheet total of 106.0 billion.

13. *Pensions (Cash Surrender Value).* Though there are some pension funds like TIAA-CREF that allow the beneficiary to "cash in" their policy before retirement, these policies are extremely rare. Therefore, I assumed that the only pension policies that had a cash surrender option were for those individuals who were retired and were currently receiving benefits.

From the IRS tax data, information was provided on pension benefits received by retired workers. In 1969, total pension benefits received by retired workers amounted to 8.5 billion, while the total cash surrender value of pension funds was estimated at 7.0 billion (Table 1). The implication is that only a small portion of the pension recipients have the option to convert from an annuity (i.e. a stream of payments) into a lump-sum cash surrender payment. However, since there is no way of knowing which plans have this provision, I assumed that everyone receiving pension benefits had this option, and computed the cash surrender value of the pension plan for each pension recipient. This, of course, grossly overestimated the actual aggregate cash surrender value, so I then deflated the cash value for each recipient by a scalar so that the total aligned with the 7.0 billion aggregate balance sheet value. This procedure is in accord with the basic methodology used here of overstating the dispersion of each asset in the balance sheet when relevant information is missing and thereby understating the concentration of wealth.

To compute the cash value of a pension plan (PC), I first assumed that the annual pension benefit (PB) was fixed over time in *current* dollars. Second, I obtained information on the median life expectancy by age, race, and sex group. Third, since most securities held in pension funds are long-term obligations, I

[17]Technically, I used a modified version of the so-called R.A.S. method, which is employed to balance input-output matrices when the row and column totals of the matrix are known but only partial information is available on the matrix elements themselves. The method works as follows: First, a matrix of household heads by income class and age class was computed from the 1969 MESP sample. Second, for each coverage level, the percentage frequency of coverage by age class was treated as the "column totals" for the new matrix to be constructed and the percentage frequency of coverage by income class as the "row totals." Third, in successive iterations until convergence was reached, the column totals were first distributed proportionately over the columns of the matrix and then the row totals were proportionately distributed over the rows of the matrix.

[18]It is unclear from the description in Internal Revenue Service (1976) whether the sample of life insurance policies drawn for the study included both term and full life and, if so, in what proportions. If term life policy holders were included, my method would overstate the number of households with life insurance equity and thus understate the actual concentration in such equity holdings.

used for the discount factor the yield on a 10-year treasury security in 1969, which was 6.67 percent. Fourth, *PC* was computed as the present value of the discounted stream of future pension benefits (*PB*) from current age (A_c) in 1969 to expected age of decrease (A_d):

$$PC = \sum_{t=A_c}^{A_d} \frac{PB}{(1.0667)^{t-A_c}}. \tag{1}$$

Fifth, the resulting estimates of *PC* were all proportionately reduced so as to align with the national balance sheet total.

14. *Mortgage debt.* Considerably more information was available in the MESP database for the imputation of home mortgage debt. In the Public Use Sample, both home value and length of time of ownership ("When Moved In") were provided for each household. From other sources, information was obtained on average interest rates for home mortgages, average maturity of home mortgages, and a price index for residential housing. Assuming an average down payment of 25 percent and using standard mortgage amortization tables, I estimated the outstanding home mortgage for each home-owner based on initial house value (current value multiplied by the price index) and time of ownership. The initial estimates resulted in a total household mortgage debt of 273.8 billion dollars, compared to the balance sheet total of 276.5 billion, and the estimates were then corrected by 1.0 percent (276.5/273.8).

15. *Other household debt.* Interest payments for households itemizing their deductions are recorded in the IRS tax return data. In the MESP file, 40.9 percent of all households recorded some interest payments. Projector and Weiss (1966) reports that 56.0 percent of all households in 1962 had some form of personal debt.[19] I used the 56.0 percent figure as a control total for 1969. To select the remaining 15.1 percent (56.0 percent − 40.9 percent) of households with consumer debt, I randomly chose households within income class from those who took the standard deduction so as to match the distribution of households by income class with consumer debt reported in Projector and Weiss (1966). To estimate the actual amount of consumer debt, I first computed the average debt by income class for those who had consumer debt from the Projector and Weiss data. Second, I assumed that *within* income class those who itemized their deductions and reported interest payments had the same average consumer debt as those who did not itemize deductions (but who were stochastically assigned a consumer debt). From this assumption it was then possible to compute the outstanding debt of the itemized deduction group by income class. Third, for the itemized deduction group, the interest payments reported on their IRS tax returns were then capitalized into personal debt. Fourth, the standard deduction group was assigned a debt proportional to income based on the Projector and Weiss calculations and the household's income class. Fifth, personal debt was then aligned to the balance sheet total of 178.6 billion.

[19]Another 5 percent of households also had some form of debt secured by investment assets. However, 4 percent out of the 5 percent had their debt secured by investment real estate (i.e., mortgages), which is already covered in the mortgage debt category. The remaining 1 percent secured their debt with stocks. Since this group was so small, this component of debt was ignored.

TABLE 2

MEASURES OF HOUSEHOLD WEALTH CONCENTRATION: MESP, ESTATE TAX DATA, AND SFCC COVERAGE

Balance Sheet Items Covered	Net Worth (in Billions)	Gini Coefficient	Share Held By Top 1%[a]	Share Held By Top 5%[a]
1. MESP (HDW)	$2,918	0.72	30.8%	49.2%
2. Estate Tax Data[b]	2,477	0.83	35.7	56.4
3. SFCC (full reporting)[c]	2,573	0.80	34.3	54.4
4. SFCC (under-reporting)[d]	2,247	0.77	33.1	52.8

Notes:

[a]The top percentiles are defined in each case according to the measure of household wealth used.

[b]This is defined as: all real estate + all fixed claim assets in Table 1 + corporate stock + unincorporated farm and non-farm business equity + trust fund equity + the cash surrender value of insurance policies − mortgage and other household debt. See Smith and Franklin (1974).

[c]This is defined as: all real estate + automobiles + all fixed claim assets in Table 1 + corporate stock + unincorporated farm and non-farm business equity + trust fund equity + the cash surrender value of insurance policies − mortgage and other household debt. See Projector and Weiss (1966).

[d]This is defined as all real estate + automobiles + demand deposits and currency + (0.51 × time and savings deposits) + (0.62 × bonds, securities, and other fixed claim assets) + (0.79 × corporate stock) + unincorporated farm and non-farm business equity + trust fund equity + the cash surrender value of insurance policies − (0.93 × mortgage debt) − (0.65 × other household debt). The source for these figures is Projector and Weiss (1966), p. 61.

II. A COMPARISON OF MESP WITH ESTATE TAX DATA AND SFCC COVERAGE

As Table 2 shows, the Gini coefficient for the distribution of HDW estimated from the MESP sample with all assets and liabilities included is 0.72. The share of net worth held by the top one percent of wealthholders in 1969 is 31 percent and the share of the top five percent is 49 percent. The next line of Table 2 shows similar statistics based only on balance sheet items normally included in estate tax data. There are, of course, many technical issues involved with the valuation of wealth items for estate tax purposes, particularly in regard to trust funds, and there are also complex issues with regard to customary practices in recording the estates of decedents. Generally speaking, all the assets listed in Table 1 are included in estate tax data with the usual exception of consumer durables, household inventories, and pension cash surrender value. All liabilities are normally included.[20] Estimates of the concentration of net worth with the exclusion of these items from the MESP sample are shown in line 2. As to be expected, the concentration estimates are distinctly higher, since the excluded assets, durables and inventories, are quite evenly distributed in the population.[21] The estimated Gini coefficient is 0.83, the share held by the top one percent is 36 percent and the share held by the top 5 percent is 56 percent. It is interesting to note that Smith and Franklin (1974) estimate that the share held by the richest one percent in 1969 is 25 percent. However, the sample they use consists of

[20]Since federal estate duties are steeply progressive, most accountants will try to understate the value of estate assets as much as possible while reporting liabilities at true value.

[21]The other omitted asset, the cash surrender value of pensions, is too small in the overall household balance sheet to make much difference.

persons (actually, decedents), not households. It is possible that the two estimates are consistent, as long as there is a sufficiently high correlation of wealth between spouses in the upper wealth groups and a sufficiently greater incidence of unmarried heads of households among the poor.[22] However, it is more likely that the discrepancy is due either to underreporting in estate tax data or to intervivos transfers in anticipation of death for tax avoidance.

The assets recorded in the SFCC essentially include all those in estate tax data plus automobiles. All liabilities are also included in the SFCC. Under the assumption that there is full reporting of all included assets and liabilities, it would be expected that the concentration estimates from the SFCC list would be slightly smaller than those from the estate tax data list, since automobiles are relatively equally distributed. This is confirmed in line 3. The estimated Gini coefficient is 0.80, the share held by the richest one percent is 34 percent, and that held by the richest five percent is 54 percent.

In the last comparison, the assets and liabilities reported in the SFCC were again used but the same degree of underreporting of assets and liabilities that occurred in the SFCC was replicated. I assume no correlation between the likelihood of underreporting and the level of wealth or asset (liability) value, and the valuation of the household balance sheet was adjusted by multiplying relevant balance sheet items by a scalar equal to their underreporting fraction. The resulting concentration estimates, shown in line 4, are less than those estimated under the assumption of full reporting assets and liabilities (line 3). The reason for the downward bias is that those assets that were underreported are also among the most highly concentrated. This is particularly so for bonds and financial securities and stocks. Time and savings deposits, which had a reporting rate of 51 percent in the SFCC, are less concentrated than stocks or bonds but more concentrated than HDW. There is also an upward bias from the underreporting of liabilities, which are negatively correlated with net worth, but the net effect is a downward bias.

In summary, it is probably safe to surmise that survey and administrative sources of household wealth data will likely produce over-estimates of household wealth concentration because of the exclusion of durables and household inventories. Moreover, underreporting is likely, on net, to produce a downward bias in estimates of household wealth concentration. Of the two sources of error, the omission of assets seems to be the most serious, since the combined effect of omission and underreporting (line 4) results in a fairly sizeable upward bias in the concentration estimates.

III. Analysis of Household Wealth Inequality

1. *Comparison with income and earnings.* In Table 3, concentration estimates are shown for HDW and various concepts of household income and labor earnings. The concentration measures are considerably higher for household wealth than for income or labor income. The Gini coefficient for HDW is 0.72, compared to 0.49 or 0.53 for household income and 0.36 or 0.37 for household

[22]There are also fairly technical issues involved with the determination of which assets and liabilities held by a family are recorded in the estate of the spouse that dies first.

TABLE 3

THE CONCENTRATION OF HOUSEHOLD WEALTH, INCOME, AND LABOR EARNINGS

Item	Gini Coefficient	Share Held by Top 1%[a]	Top 5%[a]	Top 20%[a]
1. Net Worth (HDW)	0.72	30.8%	49.2%	73.9%
2. AGIX[b]	0.53	18.4	29.8	54.1
3. Total Household Income[c]	0.49	17.3	28.2	51.5
4. Total Household Wages and Salaries (recipients only)[d]	0.37	5.0	15.4	40.9
5. Wages and Salaries of Head of Household (recipients only)[e]	0.36	5.7	16.3	40.4

Notes:

[a]Households are first ranked in terms of the wealth, income, or earnings concept used in each case to determine the top percentiles.

[b]This is defined as the sum of adjusted gross income (AGI) plus excluded dividends plus excluded pension income.

[c]This is defined as the sum of AGIX plus social security income plus welfare income.

[d]This is defined as the sum of all wages and salaries received by household members. Only households which received some wage and salary income are included in the calculation of the Gini coefficient and concentration shares. The source of the data is the Census Public Use Sample.

[e]This is defined as the wages and salaries received by the head of household. Only households whose head received wage or salary income are included in the calculation of the Gini coefficient and concentration shares. The source of the data is the Census Public Use Sample.

wage and salary income among those households earning labor income. The concentration shares reveal a similar pattern. There is thus a very sizeable difference in both the concentration of and the shape of the distribution of household wealth compared to either household income or labor earnings.

2. *Concentration of components of wealth.* There are also sizeable differences in the concentration of different assets and components of household wealth. Also, because many assets are owned by only a small proportion of the population, it is helpful to separate out two factors that determine its overall degree of concentration. The first is its relative dispersion among the owners of the asset and the second is its degree of ownership. A decomposition of the Gini coefficient can be employed to analytically separate these two factors.[23]

Let:

n_i = the percent of wealth recipients in wealth (asset) class i, where households are ordered by holdings of wealth (asset) and the first class is defined as zero wealth in the case of assets.

w_i = the percent of the total wealth (value of asset) held by wealth (asset) class i.

$$w_i^* = w_1 + \ldots + w_i$$

$$v_i = w_i^* + w_{i-1}^*,$$

where w_0^* is defined to equal zero.

[23]Technically, this decomposition holds only for assets or components of wealth which are restricted to non-negative values.

(1) $$H = \Sigma n_i v_i$$

Then, the overall Gini coefficient G is given by:

(2) $$G = 1 - H$$

Let:

G_1 = the Gini coefficient that would prevail if all asset owners had the same amount of assets.
p = fraction of households who hold asset.

Then:

(3) $$G_1 = 1 - p$$

Moreover, define:

G_2 = the Gini coefficient that prevails exclusively among households that hold the asset.

Then:

$$G_2 = 1 - \Sigma n_i v_i / p$$

The overall Gini coefficient G can now be related to G_1 and G_2, as follows. From (1), (2), and (3),

$$G = (1-p) + pG_2$$

From (3),

$$G = G_1 + pG_2$$

Table 4 shows the estimates of the concentration of different components of household wealth, as well as overall household wealth. The first column shows the concentration of ownership of each item for the whole population; the second column shows the percentage of the population *not* owning the item, which is equivalent to G_1; and the third column shows the degree of concentration of asset holdings among owners only (G_2). Four components listed in Table 4 are less concentrated than HDW. The least concentrated household wealth component is durables and inventories, whose Gini coefficient is 0.30 and whose ownership was spread throughout the population. The next in line is demand deposits and currency, which was also held by every household and which has a Gini coefficient of 0.55. The third least concentrated component is equity in owner-occupied housing, which has an overall Gini coefficient of 0.69. Only half the households in the U.S. owned their own home in 1969, but among owners the Gini coefficient is quite low, with a value of 0.38. Slightly more concentrated than equity in owner-occupied housing is the cash surrender value of insurance policies, with a Gini coefficient of 0.72. This asset was widely distributed with 81 percent of households having some equity in life insurance. However, among policy holders, life insurance equity is unevenly distributed, with a Gini coefficient of 0.65, probably because there is very little build-up of equity in life insurance policies until about age 60.

TABLE 4

THE CONCENTRATION OF SELECTED COMPONENTS OF HOUSEHOLD WEALTH[a]

Item	Overall Gini Coefficient (G)	Percent of Households Not Owning Item ($G_1 = 1 - p$)	Gini Coefficient for Owners Only (G_2)
1. Equity in Owner-Occupied Housing[b]	0.689	0.500	0.379
2. Durables Plus Inventory	0.297	0.0	0.297
3. Demand Deposits and Currency	0.554	0.0	0.554
4. Time and Savings Deposits	0.885	0.578	0.728
5. Bonds and Securities	0.937	0.691	0.796
6. Corporate Stock	0.977	0.841	0.855
7. Business Equity Plus Net Equity in Investment Real Estate	0.944	0.791	0.730
8. Trust Fund Equity	0.997	0.992	0.690
9. Insurance Cash Surrender Value	0.718	0.194	0.650
10. Total Assets	0.655	0.0	0.655
11. Household Disposable Wealth (HDW)	0.720	0.0	0.720
12. Life-Cycle Wealth[c]	0.585	0.0	0.585
13. Capital Wealth[d]	0.881	0.417	0.795

Notes:

[a] All estimates are based on the MESP database. The sample size is 63,457 households. The sample was divided into 85 wealth classes for the computation of each Gini coefficient.

[b] Mortgage debt was first divided proportionately between owner-occupied housing and other (i.e. investment) real estate. Net equity in owner-occupied housing was defined as the difference between the value of owner-occupied housing and the proportional share of mortgage debt. Net equity in investment real estate was similarly defined.

[c] Life-cycle wealth is defined as the sum of equity in owner-occupied housing, durables plus inventory, demand deposits and currency, and the cash value of insurance and pensions less consumer debt.

[d] Capital wealth is defined as the sum of time and savings deposits, bonds and securities, corporate stock, business equity, net equity in investment real estate, and trust fund equity.

Assets listed in lines 4 through 8 are each substantially more concentrated than net worth. The most concentrated of these is trust funds with a Gini coefficient close to unity; the next is corporate stock with a Gini measure of 0.98; third in line is net equity in unincorporated business and investment real estate, with a Gini value of 0.94; fourth is bonds and securities, with a Gini of 0.94; and the fifth is time and savings deposits with a Gini coefficient of 0.89. Except for the last of these assets, each was owned by at most 31 percent of households. Trust funds, in fact, were held by less than 1 percent of the population. Among owners, each of these assets is highly concentrated, with Gini coefficients of 0.69 or more. Corporate stock is the most highly concentrated among owners, with a G_2 value of 0.86.

Household assets are less concentrated than household net worth. This is due to a generally negative relation between the debt-to-equity ratio and net

worth. More specifically, the household debt-equity ratio rises with HDW until about $25,000 of net worth and then falls off almost continuously with HDW.

HDW was then divided into two exhaustive and mutually exclusive components. The first, called "life-cycle wealth," is defined as the sum of equity in owner-occupied housing, durables, household inventory, demand deposits and currency, and the cash value of life insurance and pensions less consumer debt. The second, called "capital wealth," is the residual, defined as the sum of time and savings deposits, bonds and securities, corporate stock, business equity, net equity in investment real estate, and trust fund equity. In previous work, it was found that the distribution of "life-cycle wealth" among households was better accounted for by the so-called life-cycle model of savings than the distribution of "capital wealth" (see Wolff (1981)). From lines 12 and 13 of Table 4, it is apparent that life-cycle wealth is considerably more widely and evenly distributed than capital wealth. All households owned some component of life-cycle wealth, whereas only 58 percent of households owned some form of capital wealth. Moreover, the Gini coefficient for life-cycle wealth is 0.59, compared to 0.88 for capital wealth. Even among holders, capital wealth is highly concentrated with a value of G_2 of 0.80. Finally, it should be noted that the concentration of life-cycle wealth is considerably less than that of HDW and nearer to the range of values for the concentration of household income. These results lend added suport to the argument that households that do accumulate wealth over the life-cycle do so mainly for own use (housing, durables, inventory), liquidity (currency and demand deposits), and retirement (pension and life insurance cash value). Capital wealth, on the other hand, is accumulated by another class and very likely for other reasons such as power and control.

3. *Level and composition of household wealth.* Table 5 shows both the level and composition of household wealth by income, wealth, and age class. Age was chosen as a classification variable because of its important role as an independent factor in many theories of household wealth accumulation.[24] With regard to the level of wealth, there is a strong positive correlation evident between it and household income, as one might expect. Except for the first income class, HDW rises as income increases. In the case of the first income class, households with negative income are included, who have, in some cases, substantial equity in unincorporated business. HDW also rises across age classes. It increases by 54 between the 25 to 34 and 35 to 44 age groups, by 33 percent between the 35 to between the 25 to 34 and 35–44 age groups, by 33 percent between the 35 to 44 and the 45 to 54 age brackets, by 31 percent between the 45–54 and 55–64 age classes, and by 2 percent between the 55–64 and the 65 and over groups. It is interesting to note that net worth does not decline after the usual retirement age of 65, a result that is at variance with many life-cycle models.[25]

Portfolio composition also shows a systematic relation to income, wealth, and age. Equity in owner-occupied housing as a share of household wealth rises

[24]Differences in wealth pattern across other demographic divisions such as by race or education are largely explainable by differences in income.

[25]In Wolff (1981), a decline in net worth was reported between the 55 to 64 and the 65 and over age classes. However, in that work, household inventories, state and local government securities, trust fund equity, and insurance and pension cash value were not included in the household balance sheets.

TABLE 5

THE PERCENTAGE COMPOSITION OF HOUSEHOLD DISPOSABLE WEALTH BY INCOME, WEALTH, AND AGE CLASSES

	Number of Households (in 1,000s)	Mean HDW	Percentage Composition: Owner-Occupied Housing (Equity)	Durables Plus Inventories	Demand Deposits and Currency	Time and Savings Deposits	Bonds, Securities, Stock, and Trust Equity	Equity in Business and Investment Real Estate	Insurance and Pension Cash Value	Consumer Debt[c]
All	63,457	$45,969	13.1%	14.9%	3.6%	13.1	34.1%	23.4%	3.9%	−6.1%
1. *Income Classes*										
(a) $0–9,999	18,268	5,944	7.3	78.8	7.9	3.5	2.4	1.2	9.6	−10.8
(b) $5,000–7,499	10,393	24,673	15.7	23.4	5.4	14.6	21.9	23.6	4.1	−8.6
(c) $7,500–9,999	10,614	26,346	19.9	26.9	4.6	13.2	20.5	16.9	5.2	−7.3
(d) $10,000–14,999	12,293	36,181	21.0	24.2	4.0	12.1	21.2	17.3	6.6	−6.4
(e) $15,000–19,999	4,406	60,834	17.9	17.5	4.6	14.3	24.8	19.9	7.2	−5.1
(f) $20,000–24,999	1,623	100,188	12.8	11.6	3.1	13.4	34.4	22.1	6.3	−3.7
(g) $25,000–49,999	1,528	179,433	9.6	7.4	2.6	14.4	35.8	30.3	4.6	−4.6
(h) $50,000–99,499	332	549,627	3.5	2.9	1.6	13.9	46.2	37.1	1.6	−6.8
(i) $100,000 or over	162	2,469,201	0.5	2.2	0.8	5.8	81.8	19.5	0.4	−10.8
2. *Wealth Classes*[a]										
(a) $0,–9,999	18,268	5,944	7.3	78.8	7.9	3.5	2.4	1.2	9.6	−10.8
(b) $10,000–24,999	21,233	16,627	32.8	42.0	4.8	6.4	6.1	5.7	8.3	−6.1
(c) $25,000–49,999	12,000	34,802	29.9	22.6	5.1	12.0	14.4	13.4	6.8	−4.2
(d) $50,000–74,999	4,380	60,926	17.1	12.4	5.3	23.9	16.8	23.0	4.4	−3.0
(e) $75,000–99,999	2,240	85,899	13.9	8.8	4.7	22.0	20.8	28.2	3.5	−1.9
(f) $100,000–249,999	3,693	149,529	7.7	5.6	3.7	16.6	34.0	31.3	2.8	−1.8
(g) $250,000–499,999	788	333,977	4.3	3.3	2.4	11.3	48.0	29.8	2.1	−1.3
(h) $500,000 or over	466	1,768,747	0.7	1.6	1.0	9.2	59.5	28.1	0.5	−0.6
3. *Age Classes*[b]										
(a) Under 25	4,673	17,745	4.5	31.5	5.8	15.5	22.9	19.8	2.8	−2.9
(b) 25–34	11,620	27,404	12.4	27.4	4.0	14.5	23.0	20.0	3.6	−5.0
(c) 35–44	11,788	36,688	18.8	21.1	3.8	11.2	24.7	21.3	3.9	−4.9
(d) 45–54	12,159	48,637	17.0	16.5	3.7	13.6	33.0	22.4	4.9	−11.2
(e) 55–64	10,806	63,668	11.9	10.6	3.1	11.2	40.8	23.6	4.3	−5.5
(f) 65 or over	12,411	64,798	9.4	7.3	3.5	14.6	39.8	26.9	2.9	−4.4

[a] Households with negative net worth are excluded from this part of the table.

[b] Age class is defined according to the age of the head of household.

[c] This is defined as all household debt except mortgage debt.

with income up to an income level of $15,000 and then falls continuously with income. Durables and inventory have a somewhat similar pattern, rising as a fraction of HDW up to $10,000 of income and then declining as a share. The portion of household wealth held in demand deposits and currency tends to decline with income, while the portion held in the form of time and savings deposits remains about constant, except for the last income class. The portion held in the form of bonds, securities, stocks, and trust equity remains fairly constant up to $15,000 of income and then increases steadily with income. For the top income class, 82 percent of HDW takes this form. Equity in business and investment real estate falls with income up to a level of $10,000, then rises steadily with income until the last income class, and then decreases sharply. The cash value of insurance and pension plans increases with income up to a level of $20,000 and then steadily declines. Finally consumer debt as a fraction of HDW increases between the first two income classes, declines steadily with income up to a level of $25,000, and then rises with income.

With respect to wealth class the patterns are even sharper. Equity in owner-occupied housing as a portion of HDW increases between the first two wealth classes and then steadily declines. The fraction of wealth held as durables and household inventory and as demand deposits and currency declines almost continuously with HDW. Time and savings deposits as a share of wealth increase up to a level of $75,000 and then decline while the portion invested in bonds, securities, stock, and trust equity rises steadily with wealth. The percentage of wealth held in the form of unincorporated business and investment real estate increases with wealth up to a level of $250,000 and then levels off. The portion of wealth held in the form of insurance and pension cash surrender value declines steadily with wealth. Finally, consumer debt as a fraction of HDW decreases continuously with HDW.

The composition of wealth with respect to age class also shows some interesting patterns. The proportion of household wealth invested in owner-occupied housing increases with age until age 45 and then declines, while that held in the form of durables and inventories falls sharply with age. The portion held as demand deposits and currency declines slightly with age until 65 and then rises slightly, while other bank deposits remain fairly constant as a fraction of HDW over the life-cycle. The fraction of wealth invested in bonds, securities, stocks, and trust equity increases with age until 65 and then levels off, while equity in business and investment real estate increases somewhat with age. Insurance and pension cash value as a proportion of HDW increases with age until 55 and then declines. Finally, consumer debt as a fraction of HDW also rises with age until 55 and then decreases. The sharp peak in the 45–54 age class may be associated with the costs of financing a college education.

IV. Conclusion

Two sets of findings emerge from this study. The first concerns the likely biases that may be found in survey and administrative data sources of household wealth information. Two types of errors were analyzed. The first is the omission from the household balance sheet of various categories of assets and liabilities.

Based on estate tax data and the Survey of Financial Characteristics of Consumers (SFCC), the most common omissions seem to be consumer durables and household inventories. The exclusion of these assets results in a sizeable upward bias in estimates of household wealth concentration. The second type of error is the underreporting of the value of assets and liabilities included in the household balance sheet. Based on the SFCC, underreporting seems likely to produce a downward bias in estimates of household wealth concentration, since assets held by the upper wealth classes are the most likely to be undervalued. Of the two sources of errors, the omission of assets seems the more serious, since the combined effect of the two types of errors is to produce a significant upward bias in the estimate of wealth concentration.

The second set of findings concerns the relative place and role of life-cycle and capital wealth in the overall distribution of household wealth. Life-cycle wealth is considerably less concentrated than capital wealth. The Gini coefficient for it is 0.59, compared to 0.88 for capital wealth. Moreover, among the lower wealth classes, household wealth is composed almost exclusively of life-cycle wealth. For the $0–9,999 wealth class, life-cycle wealth accounts for 93 percent of HDW, and for the $10,000–24,999 wealth class, the fraction is 82 percent. This indicates that among the lower wealth groups, household wealth is accumulated almost entirely for direct use or consumption, for liquidity or for retirement purposes. Among the upper wealth classes, capital wealth is the predominant form of wealth. For the $100,000–249,999 wealth class, 82 percent of HDW takes the form of capital wealth; for the $250,000–499,999 class, the proportion is 89 percent; and for the $500,000 and above wealth class, the fraction is 97 percent. These results suggest substantially different motivations for savings and wealth accumulation for the upper wealth groups in comparison to the lower wealth classes.

BIBLIOGRAPHY

Feldstein, Martin, Social Security, Induced Retirement, and Aggregate Capital Accumulation, *Journal of Political Economy*, Vol. 82, No. 5, (September/October 1974), 905–926.

———, Social Security and the Distribution of Wealth, *Journal of the American Statistical Association*, Vol. 71, No. 356, (December 1976), pp. 800–807.

Feldstein, Martin and Pellechio, Anthony, Social Security Wealth and Household Wealth Accumulation: New Microeconometric Evidence, *Review of Economics and Statistics*, Vol. 61, No. 3, (August 1979), pp. 361–368.

Goldsmith, Raymond W., *A Study of Savings in the United States*, Vol. III, Princeton University Press, Princeton N.J., 1956.

Internal Revenue Service, *Statistics of Income, 1969; Individual Income Tax Returns*, Publication 79, September 1971.

———, *Supplemental Statistics of Income, 1972: Personal Wealth*, Publication 482, U.S. Government Printing Office, Washington, D.C., 1976.

Lampman, Robert J., *The Share of Top Wealth-Holders in National Wealth, 1922–56*, Princeton University Press, Princeton N.J., 1962.

Lansing, John B and Sonquist, John, A Cohort Analysis of Changes in the Distribution of Wealth, in Lee Soltow (ed.), *Six Papers on the Size Distribution of Income and Wealth*, National Bureau of Economic Research, New York, 1969.

Lebergott, Stanley, *The American Economy*, Princeton: Princeton University Press, 1976.

Life Insurance Marketing and Research Association and the American Council of Life Insurance, *A Profile of Life Insurance Ownership in the United States*, 1978.

Projector, Dorothy and Weiss, Gertrude, *Survey of Financial Characteristics of Consumers*, Federal Reserve Technical Papers, 1966.

Ruggles, Richard and Ruggles, Nancy, "A Strategy for Matching and Merging Microdata Sets", *Annals of Economic and Social Measurement*, Vol. 3, No. 2 (April 1974), pp. 353–371.

———, Integrated Economic Accounts for the United States, 1947–1978, Yale University Institute for Social and Policy Studies Working Paper No. 841 (November 1980).

Ruggles, Richard, Ruggles, Nancy, and Wolff, Edward, Merging Microdata: Rationale, Practice, and Testing, *Annals of Economic and Social Measurement*, Vol. 6, No. 4 (Fall 1977), pp 407–428.

Smith, James D., The Concentration of Personal Wealth in America, 1969, *The Review of Income and Wealth*, Series 20, No. 2 (June 1974).

Smith, James D and Franklin, Stephen, The Concentration of Personal Wealth, 1922–1969, *American Economic Review*, Vol. 64, No. 2 (May 1974), pp. 162–167.

Wolff, Edward N., Estimates of the 1969 Size Distribution of Household Wealth in the U.S. from a Synthetic Database, in James Smith, editor, *Modeling the Distribution and Intergenerational Transmission of Wealth*, Chicago University Press, 1980.

———, The Accumulation of Household Wealth over the Life-Cycle: A Microdata Analysis, *Review of Income and Wealth*, Series 27, No. 2 (June 1981), pp. 75–96.

———, Effect of Alternative Imputation Techniques on Estimates of Household Wealth in the U.S. in 1969, in D. Kessler, A. Masson, and D. Strauss-Kahn, eds., *Accumulation et Répartition des Patrimoines*, Economica, 1982.