CHANGES IN THE COMPOSITION AND CONCENTRATION OF PERSONAL WEALTH IN THE UNITED STATES

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While there is considerable interest in measuring the personal wealth of individuals in the United States, the opportunities for such are limited since this information is not required to be reported regularly on any tax return or other public document. Though the ideal method of measuring personal wealth in the United States might be a comprehensive survey of a representative sample of the population, the reluctance of individuals to willingly reveal personal financial information diminishes the reliability of the estimates that could be generated [9,15]. A practical, if partial, alternative to a comprehensive survey is through the use of the "estate multiplier technique."

The "estate multiplier technique" enables one to utilize administrative records, in particular estate tax returns, for the purpose of estimating the personal wealth of that segment of the population which holds a substantial portion of the total wealth of all individuals. The estimates of the wealth of these individuals, hereafter referred to as "top wealthholders," are based on a sample of Federal estate tax returns drawn for a particular year. This paper focusses on estimates of personal wealth made for 1976 and 1981 derived from samples of returns filed during 1977 and 1982, respectively.

There are three sections in the paper. Section 1 contains a summary of highlights for both 1976 and 1981. Section 2 describes the "estate multiplier" technique with an emphasis on the advantages and limitations of the technique in comparison to other methods of estimating personal wealth. Section 3 discusses ongoing and future plans for refining the sample upon which the estimates are based and describes research into the derivation of mortality rates more appropriate to the wealthier segment of the population.

1. TRENDS IN PERSONAL WEALTH

Preliminary estimates of the personal wealth of individuals in 1981 show that there were approximately 4.5 million people with gross assets of $300,000 or more. These "wealthy individuals" comprise only 2.0 percent of the nation's population and hold total assets of $2.8 trillion. Their net worth, the value of their assets after reduction for debts, was nearly $2.4 trillion. In contrast, for 1976, nearly 2 million people (less than 1 percent of the population) with a similar level of gross asset holdings had total assets in excess of $1.2 trillion [12]. The net worth of the top wealthholders for 1976 was in excess of $1.0 trillion, which was almost 23 percent of the net worth of all individuals in the country [11].

Wealthholders with Gross Assets
of $300,000 or More

Year	Wealthholders (thousands)	Total Assets (billions)	Net Worth (billions)
1976	1,938	$1,238	$1,043
1981	4,522	2,804	2,389

The number of top wealthholders with net worth of $1 million or more showed a substantial increase from 1976 to 1981, in contrast to the lack of growth in the number of millionaires between 1972 and 1976. While there were approximately 180,000 individuals with net worth of $1,000,000 or more in both 1972 and 1976, individuals with this same level of net worth in 1981 were estimated to be approximately 425,000. (Taking account of the estimating error, the estimate would range from 350,000 to 500,000 individuals at the 95 percent confidence level.) The leveling off of the number of millionaires between 1972 and 1976 is probably a result of the decline in the value of corporate stock over that period [11]. As shown below, corporate stock declined both in overall value and as a relative share of the total assets of individuals with net worth $1,000,000 or more between 1972 and 1976.

Corporate Stock Held by Top Wealthholders
With Net Worth $1,000,000 or More

Year	Corporate Stock (billions)	Total Assets (billions)	Corporate Stock As Percentage of Total Assets
1972	$215.1	$448.9	47.9%
1976	181.5	432.1	42.0

The sharp increase in the number of millionaires between 1976 and 1981 may be attributed in part to inflation. Using the Personal Consumption Expenditures Implicit Price Deflator [2], $1,000,000 in 1981 had the equivalent value of $677,121 in 1976. Additionally, the rapid increase in the value of real estate may also be responsible for growth in the number of millionaires.

Personal Wealth, 1976

Male wealthholders represented approximately 67 percent, or 5.8 million of the 8.7 million top wealthholders (defined as individuals with gross assets greater than $120,000) in 1976. The average net worth of these men was $192,000. Though far fewer in number, the 2.9 million female top wealthholders were generally wealthier with an average net worth of $261,000, about 36 percent higher than that of the males.

The vast majority (over 83 percent) of the male top wealthholders were married while less than 5 percent were widowed. This compares with 47 percent of the females who were married and 33 percent who were widowed. These percentages reflect the age composition of the top wealthholders with nearly 33 percent of the female top wealthholders and only 17 percent of the male top wealthholders being 65 years of age or older. Nearly 8 percent of the male and nearly 11 percent of the female top wealthholders were single.

As shown in Figure A, real estate was the largest single asset item held by the top wealthholders. However, corporate stock still comprised the greatest share of the assets of those wealthholders with net worth of $1,000,000 or more.

These rankings reflect the relative importance of real property to that of stock in the asset portfolio of many individuals. In addition, they reflect the effect of inflated housing values which were enough to cause many individuals to be classified as top wealthholders in 1976.

Figure A
Asset Composition of Top Wealthholders, 1976
Percent of Each Asset to Total Assets
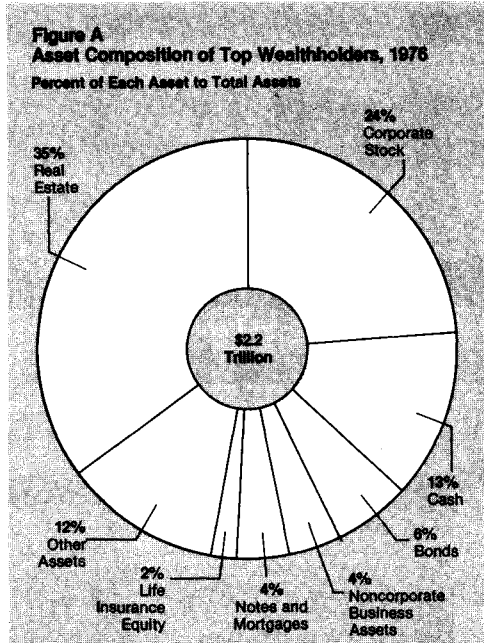
Reflecting increases in the value of the family home, real estate constituted 64 percent and 55 percent of the total assets of male and female top wealthholders with net worth of under $100,000 (see Figure B). However, as wealth increased, the relative importance of real estate for both male and female top wealthholders declined sharply. This was also true of life insurance, particularly for men.

Conversely, corporate stock and certain types of bonds became increasingly significant as the amount of wealth increased. In light of the special tax treatment afforded the income from State and local bonds, these assets were especially attractive to those "well off" individuals seeking to lessen their income tax burden. When State and local bonds were combined with "other" Federal bonds, which included Treasury notes and bills as well as special issues that could be used to pay estate taxes at death, these assets constituted over 13 percent of the total assets of female millionaires. This was in comparison to the 0.2 percent of the total assets of women with net worth of under $100,000.

Age and Wealth, 1976

The average net worth of male top wealthholders is closely correlated with age. As age increased, the average net worth increased from $119,000 for men under 50 years of age to $395,000 for men 85 years or older. On the other hand, women under age 50 were 43 percent wealthier in terms of total assets than their male counterparts, but showed a less rapid increase than males in their average net worth until their early 60's.

The nearly 2.8 million male top wealthholders under 50 years of age accounted for nearly 48 percent of all male top wealthholders and had an average net worth of $119,000. On the other hand, the 850,000 female top wealthholders under 50 years of age comprised only 29 percent of all female top wealthholders and had an average net worth of $200,000. The relatively low proportion of female top wealthholders under 50 years of age may in part be due to the acquisition of wealth by many women upon the death of their spouse.

Predictably, younger top wealthholders had a debt burden considerably heavier than that of their elders, which declined as age increased. The amount of indebtedness of males under 50 years of age was equal to 33 percent of the total assets. However, for females in this same age group, the debt burden was only 21 percent. As with the younger individuals, the debts of females of each age group was significantly lower than that of males in the same age group. This may be a reflection of the insurance protection provided more often by males that is used to pay off debts (e.g., mortgage insurance).

Personal Wealth, 1981

Of the 4.5 million top wealthholders in 1981, redefined to include only those individuals with gross assets of $300,000 or more, 65 percent were men. However, as in 1976, the average net worth of female top wealthholders was considerably higher than that of their male counterparts, $637,000 compared to $471,000.

A relatively high portion of the female top wealthholders, 28 percent, were widowed. This compared to the 4 percent of the males who were widowers. As in 1976, the greatest share of the men, 83 percent, and the women, 52 percent, were married. For both years, this reflected the age composition of the male and female top wealthholders and the difference in their life expectancies. In 1981, 48 percent of all male wealthholders were under 50 years of age in contrast to just 29 percent of female top wealthholders.

In 1981, real estate continued to be the largest single asset item held by top wealthholders with corporate stock the next most commonly held asset. Together these two asset items accounted for 55 percent of the total assets held by top wealthholders with gross assets in excess of $500,000. As in 1976, corporate stock comprised the greatest share of the assets of wealthholders with net worth of $1,000,000 or more.

2. "ESTATE MULTIPLIER" AND OTHER METHODS FOR ESTIMATING PERSONAL WEALTH
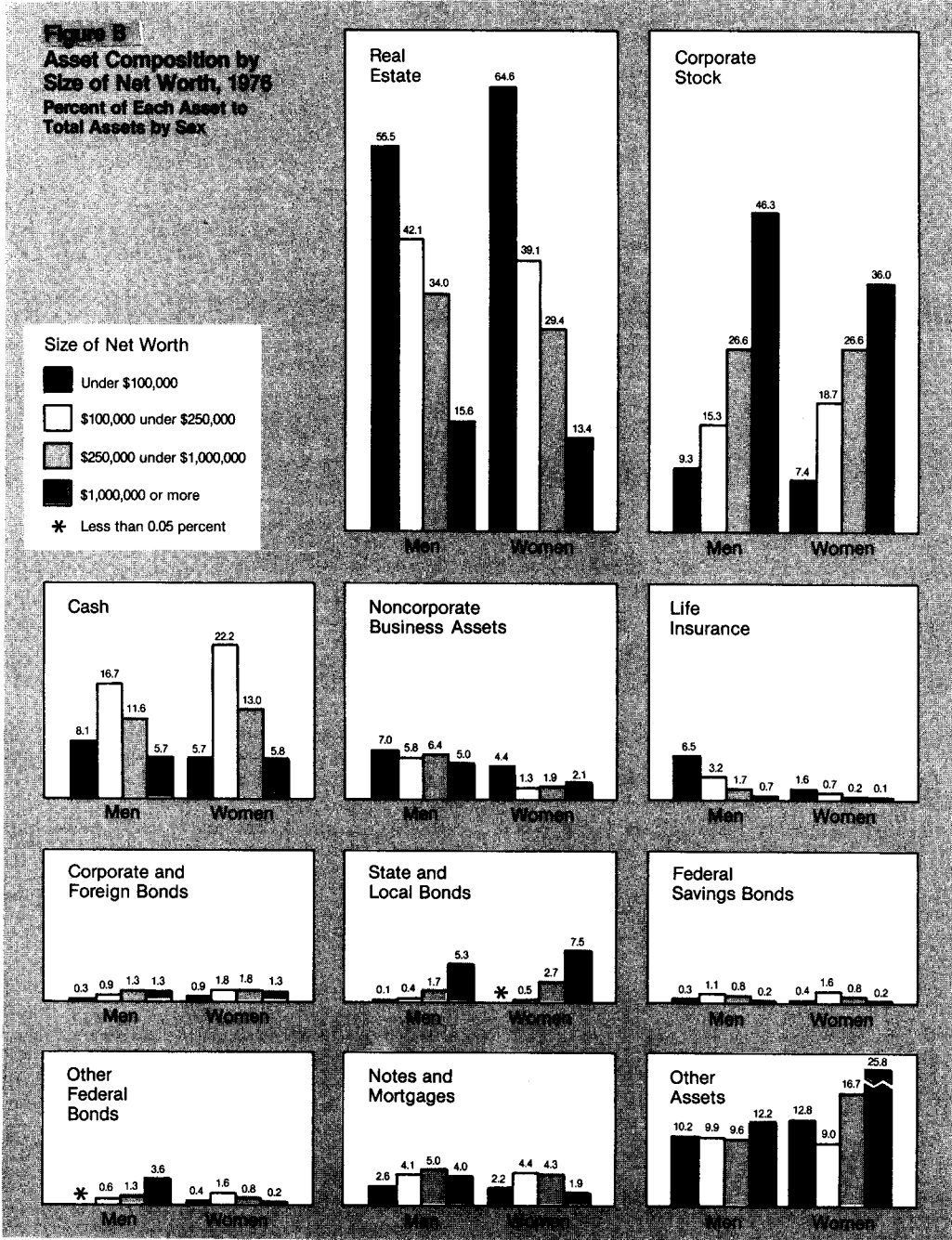
The use of the "estate multiplier" technique can be traced to the beginning of the twentieth century although it is known that a similar but less refined method was employed to estimate personal wealth as early as 1869 [1]. This statistical technique enables one to draw conclusions about the wealth of the living population through knowledge of the wealth characteristics of the deceased.

The first use of this estimating technique has been attributed to Bernard Mallet in 1908 when he applied the inverse of mortality rates to English estate duty data to estimate British wealth [14]. Subsequent use of this technique in the United States was made by Horst Mendershausen [7] and by Robert Lampman [6] who utilized Federal

Figure B
Asset Composition by Size of Net Worth, 1976
Percent of Each Asset to Total Assets by Sex

Size of Net Worth

■ Under $100,000

□ $100,000 under $250,000

▨ $250,000 under $1,000,000

■ $1,000,000 or more

* Less than 0.05 percent

Real Estate

Men: 55.5, 42.1, 34.0, 15.6
Women: 64.6, 39.1, 29.4, 13.4

Corporate Stock

Men: 9.3, 15.3, 26.6, 46.3
Women: 7.4, 18.7, 26.6, 36.0

Cash

Men: 8.1, 16.7, 11.6, 5.7
Women: 5.7, 22.2, 13.0, 5.8

Noncorporate Business Assets

Men: 7.0, 5.8, 6.4, 5.0
Women: 4.4, 1.3, 1.9, 2.1

Life Insurance

Men: 6.5, 3.2, 1.7, 0.7
Women: 1.6, 0.7, 0.2, 0.1

Corporate and Foreign Bonds

Men: 0.3, 0.9, 1.3, 1.3
Women: 0.9, 1.8, 1.8, 1.3

State and Local Bonds

Men: 0.1, 0.4, 1.7, 5.3
Women: *, 0.5, 2.7, 7.5

Federal Savings Bonds

Men: 0.3, 1.1, 0.8, 0.2
Women: 0.4, 1.6, 0.8, 0.2

Other Federal Bonds

Men: *, 0.6, 1.3, 3.6
Women: 0.4, 1.6, 0.8, 0.2

Notes and Mortgages

Men: 2.6, 4.1, 5.0, 4.0
Women: 2.2, 4.4, 4.3, 1.9

Other Assets

Men: 10.2, 9.9, 9.6, 12.2
Women: 12.8, 9.0, 16.7, 25.8

estate tax return data to estimate the wealth of the United States population. The history of the development of the estate multiplier technique is well documented by Lampman and also by James Smith and Staunton Calvert [14]. More recently, the Internal Revenue Service has published estimates of personal wealth for 1962, 1969, 1972, and most recently 1976 and 1981 [4,12] based on the application of the estate multiplier technique to Federal estate tax returns.

The underlying assumption in estimating the wealth of the living population through the application of the estate multiplier technique is that "death draws a random sample of the living population." In actuality, death is not a random event and is therefore not necessarily representative of the living population under considera-
tion. The probability of "death's selection" of an individual depends on the characteristics of that individual's life, data on some of which (e.g., age and sex) are readily available. However, mortality data in regard to other characteristics which are presumed to be significant factors in determining length of life (e.g., marital status, occupation, place of residence, and social class) generally have not been readily available, if available at all [3,10]. The estate multipliers used in estimating the personal wealth of the top wealthholders were adjusted to take account of only three characteristics: age, sex, and social class.

While the relationship between mortality and wealth is complex, a wealthy individual can afford the best health care, including preven-

tative measures, and therefore might be expected to live longer (other things being equal) than one who is not wealthy. While the gain in terms of improved mortality rates between an extremely wealthy individual and one of modest wealth is probably slight, it is reasonable to assume that mortality and wealth may be related in such a way that death rates for each age and sex group are not constant, but vary somewhat depending on the wealth of the individual.

The application of the estate multiplier is generally based on the assumption that the probability of death is substantially the same for all those with gross estate in excess of the level included in these estimates for each age and sex class. For these estimates, three sets of multipliers based on age and size of net worth were used in an attempt to take into consideration the variance in mortality rates of the wealthy.

A major problem that confronts all applications of the estate multiplier technique in the U.S. is the lack of mortality rates appropriate to the wealthy. As said before, there is much evidence to support the view that the rich do live longer [5]. Whatever index of wealth is used (e.g., income, occupation, educational attainment, the holding of insurance assets, housing) all suggest a more favorable mortality structure for the wealthy.

For the general population of the United States, annual mortality rates for age, color, and sex classifications are computed by the National Center for Health Statistics, Public Health Service, from tabulations of registered deaths in conjunction with estimates of the population prepared by the Bureau of the Census. Mortality rates based on the more favorable experience of the wealthier segment of the population are not so readily available.

For most applications of the estate multiplier technique, the mortality experience of individuals with relatively high life insurance holdings has been used as an indication of the relationship between social class and mortality. In estimating personal wealth Mendershausen (for 1944) and Lampman (for 1953) used data provided by the Metropolitan Life Insurance Company based on the insurance experience of their policyholders.

The mortality rates assumed to approximate that of the wealthy are generated utilizing data provided by the Metropolitan Life Insurance Company [16]. Three sets of age-specific multipliers for male and female decedents for 1976 were produced utilizing the insurance experience between 1973 and 1976. The same multipliers were used to generate the estimates for 1981. The three sets of multipliers shown in Figure C were based on the mortality experience of male "Whole Life" (a) policyholders with $25,000 or more in life insurance (preferred risk), (b) policyholders with $5,000 or more in life insurance (preferred risk), and (c) policyholders with non-preferred risk life insurance in amounts of $5,000 or more, hereafter identified as "Standard." The selection of a multiplier for an estate tax return was based on the age and size of net worth of the decedent according to a design utilized first for 1972 by the Internal Revenue Service which related the amount of life insurance holdings and the size of net worth. Those decedents in age/net worth categories who typically held low amounts of life insurance were assigned the appropriate multiplier based on the "Standard" experience. In general, these decedents were older and less wealthy. Weights based on "$5,000 or more" experience were assigned to wealthy individuals over 60 years of age and to individuals of moderate wealth under 60 years of age who generally held modest amounts of life insurance. Multipliers based on those policyholders who typically held large amounts of life insurance ("$25,000 or more" experience) were assigned to wealthier individuals under 60 years of age (under age 80 for millionaires).

The gross estate criterion is a Federal estate tax concept of wealth that does not conform to the usual definitions of wealth mainly because the face value of life insurance is included in the wealth of the decedent. Therefore, three measures of wealth have been used in this article: gross estate (or gross assets), total assets, and net worth.

Gross estate or gross assets is the gross value of all assets including the full face value of life insurance reduced by policy loans and before the reduction by the amount of debts. This measure defines those included in the top

Figure C.--WHITE MORTALITY RATES, WEALTH DIFFERENTIALS, AND ESTATE MULTIPLIERS

Attained age at death in years	White mortality rates (deaths per 1,000)		Multipliers¹ using White Mortality Rates		"$25,000 or more "experience			"$5,000 or more" experience			"Standard" experience		
					Wealth differentials	Estate multipliers²		Wealth differentials	Estate multipliers²		Wealth differentials	Estate multipliers²	
	Male	Female	Male	Female	Percent	Male	Female	Percent	Male	Female	Percent	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Under 40.........	1.79	0.76	558.7	1315.8	56.42	991.2	2341.3	53.23	1050.7	2481.8	57.49	972.9	2298.0
40 under 50......	4.72	2.58	211.9	387.6	59.63	355.1	649.0	66.83	316.8	579.1	67.43	314.0	573.9
50 under 55......	9.41	4.88	106.3	204.9	54.83	193.8	373.4	59.83	177.6	342.2	66.87	158.9	306.2
55 under 60......	14.96	7.57	66.8	132.1	52.31	127.8	252.5	62.13	107.6	212.6	64.92	102.9	203.5
60 under 65......	24.08	11.58	41.5	86.4	55.39	75.0	155.9	66.35	62.6	130.2	67.80	61.3	127.4
65 under 70......	35.43	16.52	28.2	60.5	62.86	44.9	96.3	70.01	40.3	86.5	73.98	38.2	81.8
70 under 75......	53.41	27.22	18.7	36.7	74.47	25.1	49.3	77.13	24.3	47.6	78.60	23.8	46.7
75 under 80......	82.47	47.45	12.1	21.1	74.88	16.2	28.1	82.04	14.8	25.7	78.48	15.5	26.9
80 under 85......	117.74	77.43	8.5	12.9	81.35	10.4	15.9	81.55	10.4	15.8	83.09	10.2	15.5
85 and over......	187.68	148.23	5.3	6.7	77.53	6.9	8.7	79.04	6.7	8.5	77.53	6.9	8.7
Age unknown......	-	-	-	-	-	90.7	89.5	-	86.3	83.5	-	81.9	79.7

1/ Computed as 1,000 divided by column 1 (or 2).

2/ Computed as 1,000 divided by the result of column 1 (or 2) x column 5 (8 or 11). For example, column 6 for "60 under 65" is 1,000 divided by the product of column 1 x column 5.

wealthholder group. Total assets, a lower wealth value, is still essentially a gross measure. This is obtained by using the cash value of the life insurance asset, that is, the value the insurance had immediately prior to death. Net worth is the level after all debts have been removed and includes the cash value of life insurance.

Sampling Variability

Because these estimates of personal wealth were based on a sample of estate tax returns filed with the Internal Revenue Service, they are subject to sampling as well as nonsampling error. The personal wealth estimates for 1976 were based on a sample of about 40,000 of the 200,000 estate tax returns filed in 1977. On the other hand, the personal wealth estimates for 1981 were based on the first stage (about 6,000 returns) of a new three-year sampling plan designed to provide estimates of wealth for a particular year of death (1982) rather than the filing year as in the past (e.g., 1976). This new sample design enables one to make wealth estimates for the year before the principal year (1981) albeit with much less precision. The reduced number of returns on which these estimates were based brought about an initial effort to measure the variance of the estimates of personal wealth. This was accomplished by utilizing a method described by Oh and Scheuren [8] which treats the deaths which occurred in each calendar month as an independent sample in conjunction with computations using the known sampling error for the 1976 estate tax returns.

The table below presents rough upper limit estimates of the coefficients of variation (CV's) for frequency estimates. The approximate CV's shown here were computed by utilizing the CV's generated for the sample of 1976 estate tax returns and the average multiplier combined with the computation of the standard deviation by the Oh-Scheuren method of selecting samples by month of death. These CV's are intended only as a general indication of the reliability of the data. As can be seen from the table the variability of the estimates for 1981 is much greater than that for 1976.

Approximated Coefficient of Variation

Number of Wealthholders	Year	
	1976	1981
6,600,000	.01	N/A*
4,500,000	.012	.02
3,000,000	.015	.025
1,500,000	.02	.035
800,000	.03	.05
300,000	.05	.08
200,000	.06	.10
65,000	.10	.17
45,000	.12	.20
21,000	.18	.30
9,000	.27	.45

*N/A = Not Applicable

3. NEW DIRECTIONS IN ESTIMATING PERSONAL WEALTH

While the estate tax return is an excellent source of financial information, its use as a data source for the asset holdings of the wealthy is somewhat limited because the wealth reported on the return in not identical to what is ordinarily considered one's personal wealth. There are important differences between estate tax wealth and the more usual notion of personal wealth.

Some interests included on the return for estate tax purposes are not part of one's personal wealth, for example, certain gifts made during the decedent's lifetime.

The fact that the assets are valued at or shortly after death may also change the size and composition of wealth. This is particularly important in the case of insurance because the full face value of insurance is reported on the estate tax return and not the cash surrender value the policy had before death. There are also the financial expenditures associated with serious illness late in life which have the effect of reducing the size of the estate or increasing the debt burden on the estate. Finally, there are important questions of ownership tied closely to property laws (e.g., community property), and there may be some inherent understatement of wealth since the returns in the sample were unaudited.

While the estimates of wealth for 1976 and 1981 are based on estate tax returns sampled during a specific filing year, the returns selected during 1982 are selected as the first part of a new sample design. Returns selected during 1977 primarily reflected deaths that occurred during 1976, but also deaths from 1977 and 1975 and several preceding years. Therefore, the estimates are derived utilizing values determined over an extended period of time. In order to more accurately reflect the wealth at a particular point in time, a "year of death" basis for the selection of the sample was utilized in 1982. Returns selected for the sample are based on decedents dying in 1982. These are augmented by a sample of all other returns, as well as selection of all returns, regardless of the year of death of the decedent, for wealthy and young decedents. This sample will be drawn over the three year period extending from January 1982 through December 1984 to estimate personal wealth in 1982.

The validity of the estimates of personal wealth utilizing the estate multiplier technique are to a large degree dependent upon the selection of an appropriate multiplier which, in turn, is computed using known mortality rates. As has been previously stated, however, the lack of exact mortality rates for the wealthiest segment of society is responsible for the degree of uncertainty which accompanies these estimates. In order to further refine the estimates, the Statistics of Income Division of the Internal Revenue Service is obtaining the death certificate number of the estate tax return decedent which will enable us to acquire additional information such as the decedent's business or occupation. These data will then be utilized to develop new wealth differentials using known mortality rates associated with cause of death and occupation.

In summary, the estate multiplier technique is a tool which can be used to estimate personal wealth from existing administrative records which are an excellent source in terms of the completeness of the asset information though one which is generally limited to the very wealthiest individuals. This method relies on differentials

derived principally from insurance data which are presumed to be appropriate to the wealthy. However, the accuracy of these differentials and others has not been validated.

There exists now a file [17] which has the potential for use in validating the differentials which have been used with the estate multiplier technique to estimate personal wealth. Briefly, information on a sample of deaths reported for 1976 has been collated with data from Federal estate tax returns, Social Security records and data from Federal individual income tax returns for 1969 and 1974, which were filed for those decedents. Data from this file, appropriately weighted, can be matched against already published income data from 1969 and 1974 to measure the extent to which any differences (aside from those attributable to sampling variability) are due to the "differential mortality" which is presumed to exist within age-sex-race-marital status groups between "top wealthholders" and the population as a whole.

ACKNOWLEDGEMENTS

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[15] Requests to participate in a repeat of the 1962 Survey of Financial Characteristics of Consumers which is currently being undertaken by the Federal Reserve Board have been less than enthusiastically received by a sample of top wealthholders. Only 9 percent of the individuals contacted have agreed to participate in the survey.

[16] We are extremely grateful for the continued support we have received from the Metropolitan Life Insurance Company, beginning with the late Mortimer Spiegelman and continuing most recently with Frances Baffa, who provided the mortality data used in the present computation of the estate multipliers.

[17] "Decedent Public Use File" available from Machine Readable Archives Division (NRR) of the National Archives and Records Service, Washington, DC 20408. More information on this file is available from the Statistics of Income Division, 1111 Constitution Avenue, NW, Washington, DC 20224.