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Volume Title: The Pattern of Financial Asset Ownership: Wisconsin Individuals, 1949

Volume Author/Editor: Thomas R. Atkinson

Volume Publisher: Princeton University Press

Volume ISBN: 0-691-04155-5

Volume URL: <http://www.nber.org/books/atki56-1>

Publication Date: 1956

Chapter Title: Use of Wisconsin Tax Returns for Estimates of Asset Holdings

Chapter Author: Thomas R. Atkinson

Chapter URL: <http://www.nber.org/chapters/c2814>

Chapter pages in book: (p. 40 - 57)

## CHAPTER 3

# Use of Wisconsin Tax Returns for Estimates of Asset Holdings

### *The Sample*

THE data on which this report is based are derived from a sample of Wisconsin state personal income tax returns for 1949. For that year returns were filed by individuals representing 1,018,333 families and single persons, and the number of persons dependent upon the reported income was 2,641,605, or 77.3 per cent of the total population of the state.<sup>1</sup> In general, Wisconsin residents are required to file returns if their net taxable income is \$800 or more if single and \$1,600 if married, or if they have total receipts of \$5,000 or more. Since blank returns are mailed to those who have previously filed returns and to new names obtained from other sources, there are ordinarily a sizable number of returns filed on which no tax is payable.<sup>2</sup> Returns without tax were included in the sample when selected by chance from the parent population.

Total income for tax purposes in Wisconsin, as prescribed by regulations, is gross income less income tax-exempt under Wisconsin law and less allowable deductions, and is similar in most respects to the concept used by the Internal Revenue Service. The major exceptions important from our standpoint include the exemption of income from real estate located outside of Wisconsin, of interest received from federal government obligations, and of federal and state pensions (including pensions paid from the Wisconsin Teachers' Retirement Fund). Interest from state and local government obligations, however, is fully taxable, as are capital gains and losses regardless of how long the asset was held.

Notwithstanding the practice followed in most other studies, capital gains were included in the concept of income used in the present survey. Although they are frequently excluded from consumption studies, partly because of the belief that normally they do not enter into consumption expenditures, no such justification for

<sup>1</sup> Wisconsin Legislative Council, *1950 Report* (Madison, 1950), Vol. 1, pp. 374-75.

<sup>2</sup> For a detailed description of filing requirements and administrative practices, see "Income Size Distributions in the United States," *Studies in Income and Wealth, Volume Five, Part II* (National Bureau of Economic Research, 1943), pp. 5-36 to 5-39.

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their exclusion can be made in a study of investment behavior. Furthermore, since income from capital gains is concentrated largely in the highest income groups, exclusion of this component would show a biased picture of the financial circumstances of at least some of the individuals in the sample.<sup>3</sup> A final reason for inclusion is that the special tax provisions affecting security transactions—a major source of capital gains—may have repercussions on individual investment practices.

Although the inclusion of capital gains in this instance gives a more appropriate concept of income, some less welcome effects must be noted. Including capital gains as part of income meant that some individuals had small or negative total incomes in 1949 when it was quite apparent that their reverses were only temporary. Similarly, in a few cases low income recipients in our sample were raised into the highest brackets by capital gains representing, for example, the sale of a family business or farm.

As defined for income tax purposes, total income in the state in 1949 was estimated to be \$3,531 million—about 80 per cent of the \$4,495 million total income payments to Wisconsin individuals in that year as estimated by the Department of Commerce.<sup>4</sup> The difference of \$964 million is estimated to consist of \$375 million of transfer payments, including interest on federal government bonds, \$275 million of income received by individuals who received less than the amount required for filing, and \$175 million representing late returns and additional income discovered by audit.<sup>5</sup> This would leave \$139 million unaccounted for—presumably a measure of the underreporting present in the returns. However, the errors in the estimates are probably so great as to prevent the use of that figure in any but the roughest sense.

The filing exemption, as well as the concept of income used in the study, presents certain difficulties to obtaining data on the ownership of financial assets. Although returns are obtained from the great majority of income recipients and most of the total income received is reported, there is a small but probably significant group of individuals not filing returns who may be important holders of financial assets. Prominent among them may be individ-

<sup>3</sup> For a description of the distribution of capital gains among different income groups see *The Nature and Tax Treatment of Capital Gains and Losses*, by Lawrence H. Seltzer (National Bureau of Economic Research, 1951).

<sup>4</sup> *Survey of Current Business* (Department of Commerce), August 1950, Table 7, p. 19.

<sup>5</sup> Wisconsin Legislative Council, *op. cit.*, p. 335.

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uals living largely on tax-exempt retirement incomes who receive rather sizable interest and dividend payments but in amounts under the minimum required for filing returns. In the analysis which follows, it will be understood that our data pertain only to persons who filed returns in 1949; unfortunately, there is no feasible method of obtaining information about the practices of persons who did not file returns.

A sample ultimately numbering 3,462 family units (some consisting of a single person, some representing a married couple only one of whom reported income, and some representing the joint information for a husband and wife who both had income) was selected from the universe of slightly over 1,000,000 tax returns. Only returns of individuals were selected; those of partnerships, corporations, and fiduciaries were excluded. Returns were sampled whether or not tax liability was indicated. The 3,462 units included in the sample had one common characteristic: they all reported interest or dividend income and thus evidenced individual ownership of financial assets. As has been indicated, the sampled returns were placed on a husband-wife basis; that is, whenever husband and wife filed separate returns—even though only one reported interest or dividend receipts—the incomes of both were combined in order to show the status of the unit as a whole. The income of additional persons in the family and data for estimating their investments were not obtained unless reported on the return of either husband or wife. For the sake of simplicity the term “individual” will be used for the units in the sample, as a means of referring to the investment holdings of individuals without constantly reiterating the presence of joint or combined, as well as single, returns in the evidence.

The only returns excluded after selection were those of a husband or wife whose spouse's return could not be located or those with gross unexplainable errors. A few returns, of course, did not itemize sources of interest and dividend income and therefore had to be omitted from the final sample.

The physical selection of the sample was not all that could have been desired, but perhaps the difficulties are not serious in effect. The returns were located in the four district offices of the Assessors of Income—Madison, Milwaukee, Appleton, and Eau Claire. The returns in each office had to be sampled during the interval after March 15 when they were available in an income sort as part of the processing procedure. Since it was not possible to run a con-

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tinuous sample in each office as returns were processed, coverage differed as between offices. In all offices the returns had been sorted into three net taxable income groups (\$0 to \$4,999, \$5,000 to \$9,999, and \$10,000 and over).<sup>6</sup> Because the returns were made available while divided into the three net taxable income groups, it was possible to make further income sorts based upon total instead of net taxable income and to apply sampling ratios such as would produce a sample heavily concentrated in the upper income groups—the most important investors. Returns were picked at set intervals to assure a random selection within any income group and tax district, although the sampling ratios varied among types of returns (long versus short forms), income groups, and different assessors' offices according to the coverage obtainable in the limited time that returns were available to the survey staff.

Differences in the coverage available within different assessors' offices and the resulting variation in sampling ratios for the several offices and for different income groups might have caused serious difficulty had it not been for the fact that control totals of income from interest and dividends were available from a survey of the same 1949 returns made by the research staff of the Wisconsin Legislative Council. A distribution of the interest and dividend income by total income groups for each tax district was obtained from that source. Since it was based on a random-stratified sample of approximately 100,000 returns, a much larger and technically more correct sample than was possible for the asset survey, the distribution of interest and dividend income among tax districts and among income groups within tax districts was presumably fairly representative of the total for the state and furnished benchmark data with which to correct unavoidable biases in the asset study.

The manner in which blow-up factors were computed in order to minimize biases arising from different sampling ratios for the several tax districts and income groups is shown in Table 6. As will be noted, all short forms and such long forms as reported negative income were treated separately and no distinction was made as to the office in which the return was filed. The long forms reporting positive income, however, were divided into two groups: those filed in the Milwaukee office and those filed in the other three offices. The latter grouping was thought desirable in order to eliminate the

<sup>6</sup> Net taxable income as defined by Wisconsin regulations differs from total income by allowable medical expenses, federal and state taxes, donations, dividends received from certain Wisconsin corporations, and minor items. While not taxable, dividends from firms doing half or more of their business within the state must be reported and itemized.

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erratic behavior of cells containing only a few cases, and also to provide for separate weighting of these returns and of those filed in the more heavily populated district served by the Milwaukee office, where investment practices might be expected to be somewhat different. Column 1 of Table 6 gives an estimate of the interest and dividend receipts reported on the universe of all returns, derived from the 100,000-return sample, after adjustment to reflect the distribution of interest and dividend income in those cases in which married couples filing separate returns were considered as joint, instead of separate, income recipients. Column 2 was derived from the small sample of returns with interest and dividend information. The blow-up factors shown in column 3 represent the total estimated interest and dividend income on all returns divided by the total interest and dividend income on the sample returns for each income group within type of return class and administrative area.

The blow-up factors were used in three different ways: First, they were applied to the interest or dividend receipts of sampled individuals in order to estimate the total amount derived from various sources or received by various types of individuals. Second, they were applied to the estimated value of the asset holdings of individuals in the sample in order to show the estimated distribution of various types of asset holdings in value terms for the universe. Finally, they were used directly as an estimate of the number of individuals exhibiting a given characteristic or possessing a certain type of asset. While it might have been preferable to compute separate sets of blow-up factors for dollar amounts and for the number of individuals, card space and the time factor prevented doing so. Therefore blow-up factors for dollar amounts were also employed in the analysis involving number of individuals.

It should be noted that interest and dividend payments to owners of the types of assets covered in the present survey do not account for all interest and dividend payments reported by individuals on their tax returns. As shown in Table 6, interest and dividend receipts reported by taxpayers in 1949 amounted to \$132.8 million. In contrast, only \$127.5 million is estimated to result from the ownership of the types of financial assets covered in the survey. The discrepancy between the two figures is accounted for by the fact that in editing the returns the following types of receipts were eliminated: misplaced wage and salary, rent, or fiduciary items; interest (and in some cases principal) received from federal government obligations erroneously reported; interest and dividends

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TABLE 6

Derivation of Blow-up Factors for Estimating Asset Holdings  
of Wisconsin Individuals from Sampled Tax Returns

DISTRICT, TYPE OF RETURN, AND TOTAL INCOME GROUP	INTEREST AND DIVIDEND INCOME		
	<i>All Returns</i> <sup>a</sup> (000)	<i>Sample</i> <i>Returns</i> <sup>b</sup>	<i>Blow-up</i> <i>Factors</i> <sup>c</sup>
<b>ALL DISTRICTS</b>			
<i>Short Form</i>	\$5,742	\$33,186	...
\$0-999	610	3,006	202.9
1,000-1,999	1,408	6,537	215.4
2,000-2,999	1,641	9,933	165.2
3,000-3,999	1,039	7,090	146.5
4,000-4,999	763	5,105	149.5
5,000 and over	281	1,515	185.5
<i>Long Form—Negative Income</i>	4,375	51,822	84.4
<b>MILWAUKEE DISTRICT</b>			
<i>Long Form—Positive Income</i>	63,530	8,424,082	...
\$0-999	820	4,095	200.2
1,000-1,999	2,640	19,073	138.4
2,000-2,999	2,681	32,854	81.6
3,000-3,999	2,674	26,085	102.5
4,000-4,999	3,666	27,045	135.6
5,000-9,999	10,122	197,664	51.2
10,000-19,999	11,258	485,918	23.2
20,000-49,999	14,407	1,200,017	12.0
50,000 and over	15,262	6,431,331	2.3
<b>MADISON, APPLETON, EAU CLAIRE DISTRICTS</b>			
<i>Long Form—Positive Income</i>	59,193	8,170,853	...
\$0-999	1,440	16,682	86.3
1,000-1,999	3,538	46,097	76.8
2,000-2,999	5,714	63,816	89.5
3,000-3,999	3,924	39,739	98.7
4,000-4,999	5,103	36,517	139.7
5,000-9,999	12,113	295,862	40.9
10,000-19,999	8,151	615,724	13.2
20,000-49,999	9,275	1,070,948	8.7
50,000 and over	9,935	5,985,468	1.7
All Forms	\$132,840	\$16,679,943	...

<sup>a</sup> Estimated from a sample of 100,000 Wisconsin tax returns for 1949 made by the Wisconsin Legislative Council. Sample data on interest and dividend income of husbands and wives filing separate returns have been adjusted to reflect their distribution on a joint return basis.

<sup>b</sup> Represents the distribution of interest and dividend income by total income groups for the sample of 3,462 tax returns (single returns, or joint or combined returns of husband and wife who both reported income) giving usable asset information.

<sup>c</sup> Computed by dividing the estimated total of interest and dividend income for all returns by the amount of such income reported on sample returns.

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from insurance policies; cooperative association stock dividends; liquidating dividends, and stock dividends.<sup>7</sup> While in numerous cases these items were subtracted by the taxpayer before determining his income for tax purposes, they were included in the tabulations from which the blown-up distributions of interest and dividend income were made and thus had to be carried in the sample distribution to compute the necessary blow-up factors.

### *Method of Valuing Asset Holdings*

The information reported in the Wisconsin income tax returns on interest and dividend receipts of individuals was sufficient to determine holdings of three broad types of asset: deposit assets—time deposits, savings and loan association shares, and the like (termed for present purposes “time deposits and related claims”); direct debt instruments such as bonds and notes; and corporate stocks. The assets held were valued either by capitalizing their incomes at typical rates prevailing in Wisconsin in 1949, or by using the 1949 prices of each issue of bonds and stocks for which specific information could be obtained. Either method gives an estimate of the average value of holdings during 1949 rather than of the amount held at a particular date in that year. The following sections describe the methods used in valuing specific types of assets within the three broad groups.

#### TIME DEPOSITS AND RELATED CLAIMS

Most investment incomes reported on Wisconsin tax returns were payments to depositors by time departments of commercial banks, mutual savings banks, the postal savings system, credit unions, and savings and loan associations. In estimating the dollar volume of deposits owned by individuals in the sample, typical 1949 rates paid by Wisconsin institutions were used as capitalization ratios rather than specific rates paid by each bank, savings and loan association, or other institution.

The typical stated rate paid by the time departments of commercial banks during 1949 was 1 per cent; but there is reason to believe that capitalization at that rate would underestimate deposit amounts in a good many cases. Many banks compute interest on only a part of the total savings account or for only a part of the time funds are on deposit, if they are withdrawn between interest

<sup>7</sup> Also excluded were interest and dividend receipts not itemized by specific source but instead attributed to nominees or to brokers and dealers. Fortunately, most individuals holding securities in such manner itemized the receipts by source as required by law.

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payment dates. Accordingly, the effective rate would actually be less than 1 per cent.

A sample survey made in 1947 by the American Bankers Association showed that in that year 34 out of 57 Wisconsin banks computed interest in such a manner that a 1 per cent stated rate yielded an effective rate of 0.86 per cent.<sup>8</sup> This checked closely with the average effective rate of 0.85 per cent paid in 1949 by all insured commercial banks in Wisconsin, which was based on average balance sheet figures and on expenditure figures for 1949 on interest payments to time depositors. Time deposit income from commercial banks was therefore capitalized at 0.85 per cent.

Similarly, average effective rates for Wisconsin institutions were used to capitalize the dividends from savings and loan associations and credit unions, which were estimated to yield 2.84 and 2.46 per cent, respectively, on the basis of combined balance sheets and operating statements of all chartered institutions located in Wisconsin. Interest receipts from postal savings accounts were capitalized at the standard 2.00 per cent rate, and the few from mutual savings banks at the same rate.

### DIRECT DEBT ASSETS (BONDS, NOTES, ETC.)

Four types of direct debt instruments were distinguishable: traded corporate and foreign government bonds; state, county, and municipal tax-exempt bonds; notes and mortgages of individuals; and notes, bonds, and other debt obligations of business organizations normally not traded through organized channels. Holdings of U.S. savings bonds and other federal government bonds were not included, since interest receipts from that source are not taxable in Wisconsin.

The first group—termed here traded bonds—were valued individually by capitalizing the interest payment received from a particular issue at the coupon rate shown in the investment manuals.<sup>9</sup> Thus, \$100 of interest received from the Chicago and Erie Railroad was considered to represent \$2,000 in principal value, since the one bond issue of that company carried a coupon rate of 5 per cent.<sup>10</sup> The principal value was then adjusted to the un-

<sup>8</sup> Information furnished by the Savings Division of the American Bankers Association.

<sup>9</sup> A substantial number of the interest payments received from corporate bonds were not multiples of the coupon rate because of the deduction of bank collection charges, but these charges were taken into account in the valuation process.

<sup>10</sup> The method of identifying and valuing bonds of corporations with two or more issues was the same as that used in the case of stocks of corporations with more than one issue, discussed in the next subsection.

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weighted mean between the high and the low market price for 1949. The market value of the above-mentioned holding was thus estimated at \$2,444, based on the unweighted mean market price of 122.2 for 1949. For a small number of foreign bond issues no information could be obtained, and it was therefore necessary to estimate their market value by capitalizing the reported income from them at 4.18 per cent, which was the ratio of interest payment to market price for the foreign bonds on which information was available.

It proved impossible to value the issues of larger governmental units at market price because so many had identical coupon rates but matured at widely different and often unidentifiable dates. Therefore they were valued individually by capitalizing the reported income receipts at their coupon rate; that is, they were valued at par instead of at market. Data were lacking altogether on a number of issues of smaller governmental units, which were therefore valued at a 2.5 per cent capitalization rate—the ratio between estimated face value and interest payment for such issues as could be identified. All direct debt obligations of individuals and business firms on which no data could be obtained were valued by capitalization at a uniform 5 per cent rate.<sup>11</sup>

### CORPORATE STOCKS

Corporations may be divided on the basis of breadth of stock ownership into two groups: the large corporations which generally raise external capital by the issuance of stock to the general public, and the much more numerous corporations which finance themselves by stock sales to a few individuals. Closely held corporate shares are seldom traded and for the most part remain in the hands of the families originally associated with the business. The distinction is one of degree, of course, but it must be recognized in determining the value of stockholdings.

In valuing stockholdings, publicly owned issues were distinguished from closely held issues by determining, from the file of stock issues held by individuals in the sample, all issues upon

<sup>11</sup> In view of the low interest rates prevailing in 1949, 6 per cent would probably have been too high; and while bank loans at 4 per cent might have been available for some of the better quality borrowers, many of the loans held by individuals might not have been desirable paper for commercial banks. In the Seventh Federal Reserve District in 1946 the average rate on business loans to borrowers with assets of less than \$50,000, charged by member banks with deposits of less than \$2 million, was 5.3 per cent. See "The Structure of Interest Rates on Business Loans at Member Banks," by Richard Youngdahl, *Federal Reserve Bulletin*, July 1947, Table 14, p. 815.

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which information on dividends and market prices for 1949 could be obtained. From the published investment manuals stock issues with 1949 price and dividend quotations were segregated and labeled "traded stocks"; the stock issues without price quotations or dividend information were labeled "untraded stocks." It should be borne in mind that the distinction between traded and untraded stocks is not precisely the distinction between publicly held issues and closely held issues, although for most purposes the correspondence is high.

*Traded Stocks.* Traded stock was valued in the following manner. The dividends reported on a tax return, divided by the 1949 dividend rate on the particular issue held, gave an estimate of the average number of shares of that issue held by the individual in 1949. The number of shares when multiplied by the unweighted mean between the high and the low 1949 market price gave an approximate market value. Thus, a \$90.00 dividend payment from the American Telephone and Telegraph Company was determined to represent a holding of ten shares of stock, since the dividend rate in 1949 was \$9.00 per share. At the unweighted mean price between the 1949 high of 155 $\frac{3}{8}$  and the 1949 low of 146 $\frac{1}{4}$ , namely 150.9, the value of such a holding was estimated at \$1,509.<sup>12</sup>

It was more difficult to value the stocks of corporations with more than one issue. Whenever the individual receiving dividends from such a company did not specify the type of issue (that is, whether preferred or common), the holding was regarded as the issue whose annual dividend rate, when divided into the total dividend payment received by the taxpayer, yielded a computed number of shares in even multiples or fractions of 100.<sup>13</sup>

<sup>12</sup> In a number of instances the reported dividend receipt differed from the annual dividend per share shown in the investment manuals, and some adjustment had to be made in the dividend rate in order to estimate correctly the value of the security. For example, dividends received from corporations paying the Wisconsin dividend tax were most frequently reported after deduction of the tax, whereas dividend rates were, of course, reported before deduction. Dividends from Canadian and other foreign corporations were frequently reported after deduction of a nonresident tax and after conversion into United States dollars, while the dividends given in manuals were not so adjusted. In one case, dividends from a foreign corporation were also subject to a progressive income tax, for which adjustment had to be made. The dividend rates of a large number of investment trust holdings had to be adjusted because some taxpayers reported dividends before deduction of capital gains distributions while others reported their dividend receipts after such deductions.

<sup>13</sup> Thus, a dividend payment of \$37.50 from the General Motors Corporation might have represented payment on 4.69 shares of common stock at \$8.00 per share, 7.5 shares of \$5.00 cumulative preferred stock, or 10 shares of \$3.75 cumulative preferred stock. Such a case would be resolved in favor of the \$3.75 preferred stock. Similarly, if the total dividends reported from General

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Since the method of valuation, here and for the other types of asset, gave an average holding for 1949 rather than a holding as of a particular date during the year, its result would be inaccurate in the case of an individual whose holdings were bought or sold during the year. For instance, a \$225.00 dividend payment from the American Telephone and Telegraph Company could have represented payment of dividends on 25 shares held during the entire year, 100 shares held for one quarter, or 50 shares held for two quarters, since the dividend paid per quarter was \$2.25 per share. Because it was impossible to determine whether a reported issue was purchased during 1949, it was assumed that the combined holdings of all individuals in the sample (or any subgroup of the sample) remained constant, though the holdings of any individual in the sample might change. Although the sales price of stock sold during the year was available from the capital gains schedule of the tax returns, these stocks were valued in most of the tabulations by capitalizing dividends received from them at the yearly rate for the sake of consistency with the above procedure.<sup>14</sup> Only in tabulations showing the measurement of sales volume were stocks sold during the year valued at actual sales price.

*Untraded Stocks.* Three alternatives were considered in selecting a method of measuring the investment of individuals in corporations whose stock is seldom traded: first, the relative importance of these assets might have been measured by the estimated amount of dividends derived from them; second, dividends from untraded stocks might have been capitalized at some specified rate of return; and third, the book value of the stocks could have been determined. In one or two important comparisons of holdings of traded and untraded stocks, the first method was employed; that is,

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Motors had been \$40.00, the holdings would have been classified as 5 shares of common stock rather than as 8 shares of \$5.00 preferred stock or 10.67 shares of \$3.75 preferred stock.

In some cases the dividend payments per share on two or more different issues were even multiples of each other or were identical. Thus, \$300.00 received from the Coca-Cola Corporation might have represented dividend payments on 50 shares of common stock paying \$6.00 per share, or 100 shares of \$3.00 Class A stock. Since the corporation had about seven times as many shares of common stock outstanding as of Class A stock, individuals' dividend receipts were distributed arbitrarily by classifying one out of every seven such holdings at random as Class A stock and calling the remainder common stock.

<sup>14</sup> Valuation at the reported sales price would have involved double counting. Suppose investor X has \$1,000 which he invests in stock A at the beginning of the year. He receives one quarterly dividend, sells the stock for \$1,000, and invests it in stock B, repeating the process each quarter. A valuation at sale price would credit him with a holding of \$1,000 in each of the four stocks, or \$4,000. Valuation by capitalizing at the annual rate would credit him with a holding of \$250 in each of the four stocks, or \$1,000, as his average holding for the year.

dividend income was used to contrast the relative importance of traded and untraded issues. That method was not generally used, however, because it did not provide value measurements—one of the principal aims of the study. On the other hand, the capitalization method of valuing untraded stocks seemed unsuitable because it would have involved arbitrary selection of a specified rate of return that would give a reasonable indication of the risk premium adhering to investment in closely held corporations. The third and most convenient alternative, valuation of corporation stocks at book value, would involve substantial errors; yet it was adopted because it was the only method of obtaining value information which avoided tenuous assumptions about the risk question.

Nearly all of the untraded stocks in the sample were issues of Wisconsin corporations or of companies doing a sizable share of their total business in that state. They were valued at book on the basis of information obtained from the Wisconsin corporate income tax returns of the corporations in question. The ratio between the dividend receipt reported by the individual in the sample and all dividends paid by a particular corporation was applied to the book value of the corporation as of the balance sheet date nearest to December 31, 1949, giving the pro rata share of the particular corporation's total book value attributable to the individual stockholder. The identification of preferred and common issues was handled in the same manner as for traded securities.

Some dividends were received from closely held corporations filing no tax returns in Wisconsin and in most instances not doing business within the state. In order to value the holdings of their stocks, it was necessary to assume that there was no important difference in rate of return (annual dividends divided by book value) between corporations for which information was available and those for which no data were obtainable from tax sources. Therefore, stocks of the latter were valued by capitalizing reported dividends at the same rate as that earned on the stocks of closely held corporations for which an estimate of book value could be obtained.

In one respect, however, the application of across-the-board capitalization rates as just described would have introduced a bias, since many of the closely held corporations whose book value could be ascertained were local banks whereas most of the "nonidentifiable" corporations were out-of-state nonbank companies. For that reason two ratios were computed for valuing the unidentified stocks: one for nonbank corporation stocks, the other for bank stocks. Un-

identified nonbank stocks were valued by capitalizing dividends at the rate of 5.20 per cent. The comparable figure for bank stocks was 2.44 per cent.

The use of book value to measure the amount of untraded stocks involves two sources of error when comparisons are made with the market value of traded stocks. In general, the book value of corporate stock in 1949 was greater than its market value, so that the use of unadjusted book value as a measure for untraded stock holdings tended to overstate their importance in relation to traded corporate stocks. Rough estimates of the book value of corporate stocks in all industry groups at the beginning of 1949, and of their market value at the end of the year, indicated that the market value was something like 70 per cent of the book value.<sup>15</sup> More important is the fact that corporations differ greatly in the relation of the book to the market value of their securities and that book value itself appears subject to fluctuations arising from conventional methods of corporate accounting which do not take into account unrealized changes in the value of corporation-owned assets. While the ratio of market to book value for bank stocks appears fairly consistent throughout the banking industry—between 80 and 90 per cent, with only a few cases in which market exceeds book value—that is not true for nonbank stocks. Not only is there considerably greater variation in the ratio of market to book value in the case of nonbank corporation stocks, but the book value of the stocks of small nonbank corporations frequently exceeds the market value, sometimes by as much as 100 per cent. The average ratio of market to book value for corporations other than railroads and financial corporations including banks was roughly 74 per cent in 1949.<sup>16</sup>

The estimated book value of untraded stocks held by individuals in different income groups was adjusted to a market value equivalent as in Table A-2 by applying 0.87 to the book value of bank stocks and 0.74 to the book value of nonbank stocks. This adjustment, while necessarily crude, seemed worth while in order to correct for the overvaluation of untraded as compared with traded stocks. The result of the adjustment is to reduce the amount of untraded stocks held by any given group of investors below that shown by the unadjusted book value. Holdings of the lowest income groups

<sup>15</sup> Raymond W. Goldsmith and Alexander Ganz, "Estimate of Market Value of Corporate Stock: 1900-1949" (National Bureau of Economic Research, Capital Requirements Study, Work Memorandum 32, mimeographed, December 1951), Table 21, p. 64.

<sup>16</sup> *Ibid.*, Table 21, p. 64.

are reduced somewhat less than the holdings of the highest income groups, because of the concentration of bank stocks in the lower income groups. Most of the analysis of Chapters 4 and 5 is based on a market value equivalent concept in valuing untraded stocks. Some evidence may be seen in Table 21 that to use the unadjusted book value of untraded stocks instead does not materially alter the analysis, except when aggregate amounts of traded and untraded stocks are compared.

From Tables A-1, A-2, and A-3 it may be calculated that the yield on traded stock in the sample amounts to 6.6 per cent (Moody's average dividend yield for 200 stocks in 1949 was 6.63 per cent) and the yield on untraded stock to 6.3 per cent based on market value equivalent. It has been suggested by numerous readers that the yield on untraded stock should be higher than the yield on traded stock, presumably because of the greater risk attached to holdings of untraded stock in small corporations. Yet in 1949 even in the case of marketed stocks, those issues with the three poorest agency rating grades (CCC, CC, and C) yielded less than medium or B grade stocks (see Chart 16). Furthermore, there is no proof that the untraded stocks were any riskier than stocks of corporations with issues traded on the exchanges.

#### *Coverage of the Survey*

The survey estimates of the financial assets held by individuals are necessarily restricted by the nature of the data employed: they are restricted geographically and to only certain types of assets, and they are subject to the limitations, such as incomplete reporting, which characterize tax data.

The geographic restriction is probably no more than a minor difficulty in a cross-section survey. In most economic measures Wisconsin ranks about midway in the array of states, and presumably the investment practices of its citizens do not vary greatly from those of individuals in a large group of states which are neither predominantly industrial nor predominantly agricultural in composition. While geographic peculiarities in investment practices doubtless exist, such basic trends as the relation of income level to stockholdings are probably broadly similar for the country as a whole, even though in one region individuals at a given income level may hold more stocks than individuals with comparable incomes living in another section of the country.

As was shown in Table 5, approximately one-half of the esti-

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ated value of all financial assets held by individuals is attributable to types covered in the survey of Wisconsin income tax returns. The important omissions are cash and demand deposits, federal government bonds, the asset value of life insurance, bonds and other debt instruments in default, and stock of corporations which paid no dividends in 1949. The survey also excludes rental property, mineral and timber leaseholds, and the value of ownership interests in unincorporated businesses. The omitted types of assets were probably more important in the lower than in the higher income groups, so that care should be exercised in using the survey results to show differences in relative wealth position of various groups in 1949.<sup>17</sup>

In estimating the total amount of interest and dividend income not reported because of filing exemptions and underreporting, estimates for the United States as a whole had to be used. Because such estimates are derived from small samples, they are of somewhat dubious accuracy when applied to a particular region. The Department of Commerce has estimated that 60 per cent of all nonfederal cash-interest payments and 33 per cent of all corporate dividends received in 1947 by individuals in the United States were not reported on federal income tax returns for that year.<sup>18</sup> These underreporting ratios may be applied to estimated total cash-interest and corporate dividend payments made to Wisconsin residents in 1949 (exclusive of federal interest payments), and the result compared with the amount actually reported on state income tax returns.

The Department of Commerce estimated that \$146 million in corporate dividends and \$85 million in nonfederal cash-interest payments were received by Wisconsin residents in 1949. Two-thirds of the former and a somewhat lower proportion of the latter—probably only two-fifths—would be expected to appear on federal income tax returns. In all, \$131.4 million of the estimated interest and dividend receipts might appear on the federal returns. Actually, \$132.8 million of interest and dividend income was reported on

<sup>17</sup> See "The Pattern of Estate Tax Wealth," by Horst Mendershausen (Life Insurance Association of America, Saving and Capital Market Study, Advisory Committee Memorandum No. 29, mimeographed, unpublished, February 1950), Table 23, p. 99.

<sup>18</sup> Information furnished by National Income Division, Office of Business Economics, Department of Commerce. The discrepancy, of course, does not indicate the extent of tax evasion on interest and dividend income, because not all interest and dividends are taxable or received by persons required to file returns.

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Wisconsin state income tax returns for 1949, as was shown in Table 6.<sup>19</sup>

The comparison indicates that the Wisconsin tax returns experience virtually the same degree of underreporting of investment income as do federal tax returns. There is some evidence to show, furthermore, that corrections for comparability reduce the underreporting of dividends from 33 per cent to around 24 per cent.<sup>20</sup> This fact is not particularly comforting, however, because in any case the interest and dividend income which is unaccounted for is a large part of the total and there is no direct evidence as to whether, in the case of Wisconsin returns, the missing income is distributed proportionately to the distribution of that actually reported or whether underreporting is more prevalent in one income group than in another.

Material derived from the Federal Audit Control Program of 1948, however, does show the areas of greatest underreporting on federal returns, and this may be relevant. Unpublished (and necessarily very rough) estimates, made at the National Bureau of Economic Research by Daniel M. Holland, suggest that underreporting of both interest and dividends is relatively greater the lower the income class of the taxpayer. His estimates indicate also that underreporting is probably more prevalent in the case of interest than it is in the case of dividend receipts.

If underreporting of income from financial assets on Wisconsin income tax returns is similar in character to that found in the federal income tax returns, the survey estimates have smaller downward bias in the case of dividend-bearing assets than in the case of interest-bearing assets. It follows also that the low income segments of the population have substantially more financial assets than they are credited with in the tables. For that reason little emphasis is placed on the distribution of assets among different income groups; most of the analysis consists of comparisons of the composition of financial asset holdings at various income levels. In final analysis the apparent biases appear to strengthen the major

<sup>19</sup> There are some minor inaccuracies in the comparison. The state total includes federal interest erroneously reported and state and local bond interest, while the federal total excludes interest from state and local bonds. The state total excludes fiduciaries, nonprofit organizations, and partnerships, but the federal total includes them.

<sup>20</sup> See "Appraisal of Basic Data Available for Constructing Income Size Distributions," by Selma F. Goldsmith, in *Conference on Research in Income and Wealth, Volume Thirteen* (National Bureau of Economic Research, 1951), Table 8, p. 302, for the 1946 ratio of reported dividends to adjusted estimate of dividends received.

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conclusions of the study, for a predominance of interest-bearing obligations in the lowest income groups is found, even without correction for differential underreporting of receipts. Accordingly, it was thought best not to make corrections for underreporting.

More direct checks on the accuracy of the data can be made in connection with interest and dividend payments on types of assets for which total payments are known. It is estimated, for instance, that only about 35 per cent of the commercial bank interest on savings accounts actually paid or credited during 1949 was reported on the Wisconsin tax returns. Since some interest payments on time deposits were made to other than individuals, underreporting in the survey data, though large, would probably be less than that figure implies. In contrast, nearly 60 per cent of the total amount of dividends paid by Wisconsin savings and loan associations is estimated to have been reported on tax returns.

A comparison of estimated and actual total dollar values of individual holdings of time deposits in banks, savings and loan associations, and credit unions as shown by the 1946 Survey of Liquid Assets reveals that the personal interview method, which was employed in the survey, gives results for the entire nation which are from 55 to 65 per cent complete in the categories mentioned.<sup>21</sup> In contrast, the estimate of total interest and dividends received from those sources based on the sample of Wisconsin tax returns appears to be only 45 to 50 per cent complete.<sup>22</sup>

The final evaluation of the advantages of studying financial asset holdings on the basis of data taken from income tax returns must be relative. Can better results be achieved by any other feasible method? A comparison of the results derived from the analysis of tax returns with those of personal interview surveys appears to favor the former in the categories which are important for studying financial asset holdings, namely, interest and dividend receipts. Estimates of interest and dividend income based on the results of the joint survey by the Bureau of Labor Statistics and the Bureau of Human Nutrition and Home Economics for 1941, the census surveys for 1944 and 1945, and the survey by the Bureau of the Census and the Bureau of Agricultural Economics for 1946 disclosed no more than 16 to 32 per cent of the totals estimated

<sup>21</sup> "A National Survey of Liquid Assets," *Federal Reserve Bulletin*, June 1946, p. 580.

<sup>22</sup> The approximate ratio given does not take into consideration the fact that some time deposits are held by individuals not filing tax returns.

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by the National Income Division of the Department of Commerce.<sup>23</sup> By comparison, 40 per cent of nonfederal cash-interest income and 66 per cent of dividend income showed up on federal tax returns in 1947, and similar amounts on the 1949 Wisconsin tax returns. Thus, while income tax returns have definite limitations as source material for data on financial asset holdings, experience has shown that they account for more of the receipts from investments than do the usual interview surveys and therefore would be subject to smaller areas of uncertainty.

<sup>23</sup> Selma F. Goldsmith, *op. cit.*, Table 3, pp. 288-89.