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CHAPTER 6

The Characteristics of Traded Stock Holdings

IN PLACING values on holdings of traded stock it was necessary, of course, to identify each separate issue, a step which made possible a number of tabulations designed to answer questions as to who holds various types of stocks. Traded stocks have widely varying characteristics, many of which are related to the safety, liquidity, and earning capacity of an investment, and it is only natural that the preferences of individuals for particular types of issues would also differ. In the belief that an individual's income is not only in itself a significant causative determinant of investment behavior but also closely related to other variables, this chapter is devoted to an analysis of the relation between the composition of portfolios of traded stock and the incomes of holders.

Is it true, for example, that the lower income group, more than individuals with higher incomes, prefers utility stocks and stocks of investment trusts? Which income groups are important holders of bank, oil, iron and steel, and automotive stocks? Does the lower income group hold a greater proportion of its total stockholdings in preferred issues than do higher income groups? Is it possible to distinguish as between income groups different preferences in regard to the quality of stocks? What about differences with respect to diversification practices, yield, price per share, and turnover according to stockholders' income levels? Such questions have practical implications for business finance; their analysis is undertaken in the following sections in the hope of providing additional insight into the characteristics of stock ownership.

Before turning to the findings, however, it should be noted that the various characteristics of stocks are often closely interrelated, with the result that an observed association between income and a particular characteristic may not be independent of relationships with other characteristics of the stock. Thus, the observed preferences of low income individuals for utility stocks may explain their larger-than-average holdings of preferred stocks, since utilities customarily have more preferred shares outstanding than most other types of corporations. Attempts were made to correct for a

few such interrelationships, but knowledge of them was too limited to make that possible in all cases.

The Markets in Which Stocks Are Traded

In this section the stock issues held by sampled individuals are divided into three general categories based upon the market facility enjoyed by the particular issue. The categories are: (1) stocks traded on the New York Stock Exchange, (2) stocks traded on the American Stock Exchange (formerly the New York Curb Exchange), and (3) stocks traded on regional exchanges or over the counter. Primarily, this division is adopted because there is an interest on the part of investors and the financial community in the institutional arrangement itself, which interest often extends to speculations about the income characteristics of people owning stocks traded in different markets.

Does the market facility which a stock possesses indicate anything more about the preferences of its holders than merely the institutional arrangement per se? One is inclined to say that it does, for there is some difference between the several exchanges in the types of stocks traded on them as well as a seeming difference in the ease with which the stocks being traded can undergo transfer of ownership. As to differences among the exchanges in the types of firms whose stocks are traded, small firms with ownership largely confined within a region would most frequently have their stocks traded on regional exchanges or over the counter, while the issues of large national concerns with widespread ownership would be found on the New York Stock or the American Stock Exchange. In part these differences arise from the restrictions imposed by the exchanges themselves upon the issues which are granted trading facilities. Perhaps even more important, however, is the apparent arrangement of exchanges into successively higher stages based upon the degree of public interest. To the extent that a high degree of public interest assures an investor of less risk of selling in an imperfect market, the successive market divisions may be taken as indicative of successively higher degrees of ease of liquidation for the particular issues concerned.

But this view is subject to serious reservations. The stock issues which lead in turnover on the regional exchanges and in the over-the-counter market have many times the volume of daily sales that characterizes the inactive stocks traded on the large exchanges. Open-end investment trust stocks, which are traded only over the

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counter, have immediate liquidation at all times through the issuing company and with the facilities of the over-the-counter market. Moreover, some stock issues are traded on both a regional and a national exchange. The following paragraph, perhaps, gives the best description of the difference between stocks traded on the exchanges and those traded over the counter:

"In general, exchanges provide their broadest markets in issues of substantial size, fairly widely held and having some speculative appeal. The common stock issues of corporations which have moved considerably beyond closely-held local affairs have, as a rule, broad markets on exchanges; so also do the speculative issues among preferreds. This leaves for the over-the-counter market the investment-type preferred issues, certain investment-type common issues and the common issues which are small and fairly closely held and often quite speculative in character. Over-the-counter markets are found in all of these types of issues and frequently constitute either the sole market or the principal one."¹

While differences between stocks traded on the New York Stock and American Stock Exchanges and those traded over the counter may be fairly sizable, distinctions between those traded on regional exchanges and over the counter are less so. Moreover, the volume of transactions on the regional exchanges is relatively small, and statistical data both for them and for the over-the-counter market are limited. For these reasons stocks traded in the regional markets and stocks traded over the counter were combined, for the analysis, in one category. The decision was perhaps regrettable in view of the recent widespread interest in over-the-counter stocks, but it could not be remedied without considerable difficulty.

As a first indication of intermarket differences in traded stocks Table 25 shows that turnover is considerably slower for issues traded on the regional exchanges and over the counter than for issues traded on the major exchanges. This result probably reflects differences in the degree of public interest, per se, in issues traded in the several markets more than variations in size of issue or corporation, despite the correlation of the last two factors with the intensity of public interest in particular securities.

Of the total value of traded stock held by Wisconsin individuals

¹ G. Wright Hoffman, *Character and Extent of Over-the-Counter Markets* (University of Pennsylvania Press, 1952), p. 16. Despite the differences mentioned, approximately 25 per cent of the common stock issues traded over the counter during the period September through November 1949 were also traded on exchanges. (*Ibid.*)

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TABLE 25

Estimated Turnover of Stocks Traded in Specified Markets
and of Untraded Stocks, 1949

<i>Market</i>	<i>Dividend- Paying Stocks Held by Wisconsin Individuals^a</i>	<i>All Listed Dividend- and Non-dividend- paying Shares^b</i>
<i>Traded Issues</i>		
New York Stock Exchange	9%	12%
American Stock Exchange	6	7
Regional exchanges and over the counter	4	c
<i>Untraded Issues</i>		
	4	c

^a Based on survey of tax returns. Turnover is given as the percentage ratio of the estimated market value of stocks sold by Wisconsin individuals to the estimated value of their stockholdings.

^b Turnover is given as the percentage ratio of the market value of securities sold to the market value of all listed shares. Data for the New York Stock Exchange compiled from *Statistical Abstract of the United States: 1950*, Tables 481 and 487, pp. 420 and 423; data for the American Stock Exchange, from *ibid.*, Table 487, p. 423, and George L. Leffler, *The Stock Market* (New York, 1951), p. 70.

^c Not available.

in 1949 about 56 per cent consisted of issues traded on the New York Stock Exchange and about 7 per cent of issues traded on the American Stock Exchange (Table 22).² The difficulty of obtaining data on the volume of activity on the regional exchanges and over the counter has led to considerable speculation about the amount of trading done there. In our definition of traded stocks (issues for which 1949 price quotations were available), stocks traded on other than the major exchanges composed about one-third of all traded stocks; if "untraded" issues are included, about three-fifths of the total dollar value of all corporate stocks consisted of issues marketed over the counter or through regional exchanges.³ This compares roughly with the independent estimate that about one-half of the market value of corporate stocks at the end of

² The relationship between the value of stocks traded on the New York Stock Exchange and those traded on the American Exchange may be used as a check on the accuracy of the survey, since the totals can be calculated from market records. The survey of Wisconsin tax returns indicated that 88.7 per cent of the dollar value of stocks traded on the two exchanges consisted of issues traded on the New York Stock Exchange. The comparable figure from the computed totals is 86.2 per cent.

³ In a few cases, stocks traded both on the regional exchanges or over the counter and on the New York or the American Stock Exchange were classified as traded on the major exchanges.

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1949 consisted of issues which find their principal markets over the counter.⁴

Whether one finds large or small differences in the market characteristics of stocks according to the income levels of their holders depends on how one treats untraded stocks. For traded issues, Table 26 shows, the variation as between income groups is not

TABLE 26
Distribution of Traded Stock Holdings According to Market in Which Stock is Traded, for Income Groups of Wisconsin Individuals, 1949

<i>Income</i>	<i>New York Stock Exchange</i>	<i>American Stock Exchange</i>	<i>Regional Ex- changes and Over the Counter</i>	<i>Total</i>
\$0-4,999	57.4%	9.2%	33.4%	100.0%
5,000-9,999	62.2	3.8	34.0	100.0
10,000-19,999	56.9	6.8	36.3	100.0
20,000-49,999	54.3	6.1	39.6	100.0
50,000 and over	53.6	9.4	37.0	100.0
All income groups ^a	56.3%	7.2%	36.5%	100.0%

Based on survey of individuals' tax returns.

^a Includes, besides the specified income groups, the small group reporting negative income, for whom the distribution (in the same order as above) was: 44.0%, 8.0%, 48.0%.

very large; but some shift in market characteristics can be noted, as higher income groups are considered, from issues traded on the New York and American Stock Exchanges to those traded on regional exchanges and over the counter. These findings on the market characteristics of stockholdings in the several income groups may be attributable, in part, to real differences in the preferences for securities with varying ease of liquidation. Certainly, securities in active markets can be liquidated more easily than those in less active markets. Although there are many exceptions, stocks traded on the major exchanges have a more active market than those traded on regional exchanges and over the counter. Yet since holdings of business interest stock—many of which pertain to medium and small Wisconsin corporations using local and over-the-counter markets—are more prevalent in higher than in lower income groups, intermarket variation probably cannot be attributed entirely to differences among income groups in liquidity preferences.

Preferred versus Common Issues

Traditionally, preferred stocks are distinguished from common stocks by reference to the contingent claim of the former against

⁴ Hoffman, *op. cit.*, p. 11.

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the earnings and assets of a corporation and to the residual claims of the latter. Hence preferred stocks have commonly been regarded as falling midway between common stocks and bonds in regard to capital safety, though that view of preferred stocks is difficult to support with empirical evidence. Preferred issues vary widely in quality: some rank with high grade bonds, and others have a dividend claim so large as to eliminate hope of return on common stock, in effect making the preferred issue the residual claimant. Nevertheless, it may be useful to inquire into the relationship between the income levels of stockholders and their holdings of common versus preferred issues, for more important than the intrinsic difference in quality between preferred and common stocks is the question whether investors act as if there were such a distinction.⁵

Table 27 shows a consistent decline for successively higher income groups in the percentage of the market value of traded stock holdings which is composed of preferred issues. The same tendency is found in the case of untraded issues, where value is measured by unadjusted book value. The figures for untraded issues are probably affected somewhat by the fact that a single holder may own both preferred and common issues of the same corporation, a contingency less likely to occur in the case of traded issues. In such cases, except where dividends from common and preferred stocks were specified, a bias existed toward classifying the entire holding as common stock, both because common shares virtually always outnumbered preferred shares and because the dividends that were received on them by some individuals often exceeded the entire dividends paid on preferred shares. Therefore, while the proportions of common to preferred may be incorrect, it is likely that the observed trend for successively higher income groups, away from preferred issues toward common issues, is true of both major classifications of stocks. Accordingly, whatever the

⁵ It will be recalled that one of the major difficulties encountered in identifying and valuing traded stocks was to distinguish between common and preferred holdings in the same corporation when both types paid the same dividends per share or when the dividend rates per share on both common and preferred were even multiples of each other. The survey results may be viewed with some confidence since the proportion of the total amount of traded stock held (including over-the-counter securities) consisting of preferred issues—11.4 per cent—compares quite closely with an independent estimate by Goldsmith and Ganz of the percentage of preferreds in the total value of issues traded on the New York Stock Exchange, the American Stock Exchange, and the regional exchanges in 1949—10.7 per cent. (R. W. Goldsmith and Alexander Ganz, "Estimates of Market Value of Corporate Stock: 1900-1949," National Bureau of Economic Research, Capital Requirements Study, Work Memorandum 32, mimeographed, December 1951, Table 1, p. 25.)

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TABLE 27

Distribution of Traded and of Untraded Stock Holdings
between Preferred and Common Issues, for Income Groups
of Wisconsin Individuals, 1949

INCOME	TRADED STOCK ^a		TOTAL	UNTRADED STOCK ^b		TOTAL
	Preferred	Common		Preferred	Common	
\$0-4,999	14.7%	85.3%	100.0%	17.9%	82.1%	100.0%
5,000-9,999	13.4	86.6	100.0	8.8	91.2	100.0
10,000-19,999	10.7	89.3	100.0	8.9	91.1	100.0
20,000-49,999	10.5	89.5	100.0	6.0	94.0	100.0
50,000 and over	5.6	94.4	100.0	2.7	97.3	100.0
All income groups ^c	11.4%	88.6%	100.0%	6.7%	93.3%	100.0%

Computed from Table A-11.

^a Based on market value.

^b Based on unadjusted book value and includes identifiable issues only.

^c Includes, besides the specified income groups, the small group reporting negative income, for whom the distributions were as follows. Traded stock: 12.7% preferred, 87.3% common. Untraded stock: 100.0% common.

intrinsic quality differences between common and preferred issues, the lower income group appears to have a greater proportion of its holdings in preferred stock than higher income groups, a result which would be expected if preferred stocks as a class were of better quality than common stocks and if it were assumed that income differences affect attitudes toward quality. The relation between income status and quality of investment will be discussed later. In any case, to some extent one would expect to find relatively high proportions of common issues in the higher income groups because of the importance of the control aspect in holdings of business interest stock.

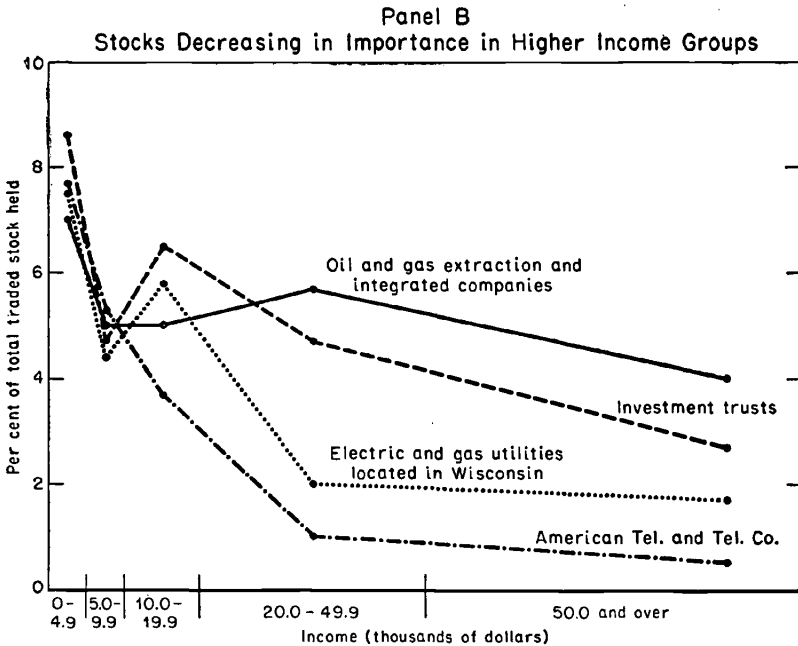
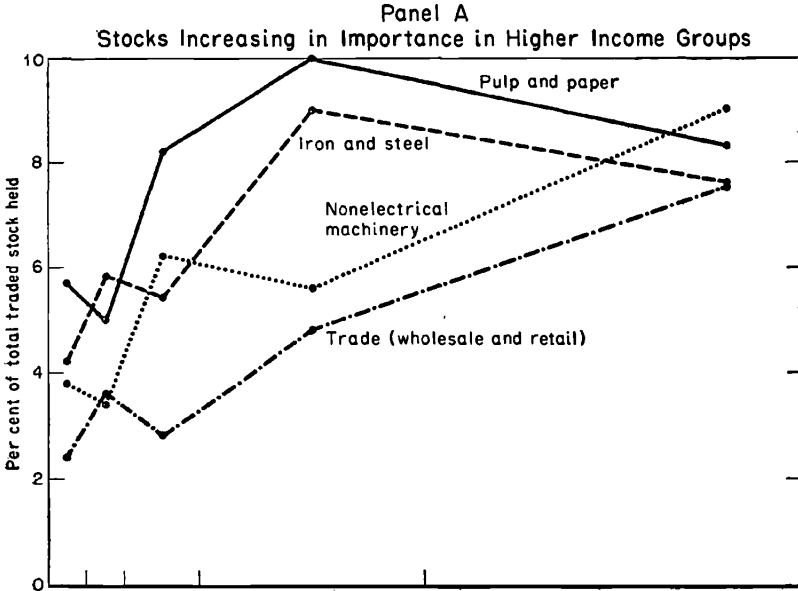
Industry of Stocks Held

Relationships between the industrial classification of traded stocks and the stockholder's income are shown graphically in Chart 11. Panel A, which shows some types of industry whose issues increase in importance for successively higher income groups, reveals that stocks in wholesale and retail trade concerns, iron and steel, pulp and paper, and nonelectrical machinery are of minor importance in the total market value of traded stock held by the lower income group, but have much greater importance in the higher income groups. Stocks which are important in the portfolios of individuals in the lower income group but which decrease in importance in the upper income groups are shown in Panel B.

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CHART 11

Relative Importance of Stocks of Selected Industries in the Traded Stock Holdings of Income Groups of Wisconsin Individuals, 1949

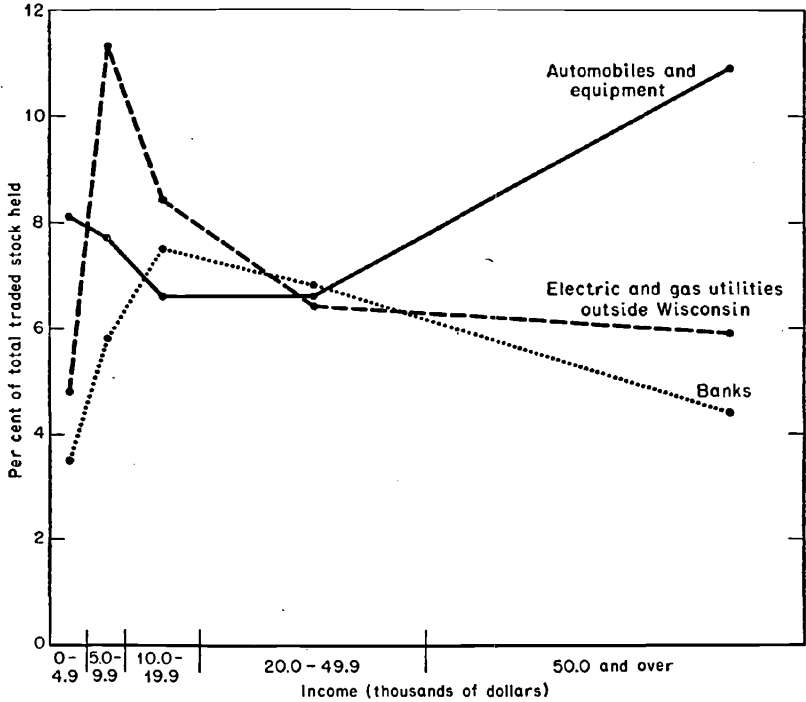


Based on Table A-12. Readings centered at \$90,000 for highest income group and at midpoints of other ranges.

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CHART 11 (continued)

Panel C
Stocks with Mixed Trends



Based on Table A-12. Readings centered at \$90,000 for highest income group and at midpoints of other ranges.

Three of the four types of stocks behaving in that way—investment trusts, electrical and gas utilities in Wisconsin, and American Telephone and Telegraph stock—are generally considered to be conservative investments, but the fourth type, petroleum stock, is usually thought of as predominantly speculative. Panel C shows some stocks with mixed trends: bank stocks, for example, increase gradually in importance as income increases until somewhere in the \$20,000 income range, where their importance begins to drop off. To some extent, of course, the industrial composition of the traded stock holdings of Wisconsin individuals is a function of the industrial composition of the state of Wisconsin. Thus, relatively large holdings of business interest stocks in the higher income groups would naturally be reflected in relatively large stockholdings in the categories of nonelectrical machinery, iron and

steel, and pulp and paper, for these are important industries in the state.

The preference of the lower income group for utility stocks is of considerable interest and importance. Although as a group the utility holdings decrease in importance for successively higher income groups, a mixed trend is observable when electric and gas utilities located in Wisconsin are compared with those outside the state. For the lower income group (under \$5,000), stocks of utilities located in Wisconsin are almost twice as important among traded holdings as are stocks of utilities located outside the state, but in the next higher income group (\$5,000 to \$9,999) the relationship is reversed. Utility firms at one time followed a conscious policy of selling stock rather widely to the lower income groups, particularly to their customers, and some part of the observed distribution of utility stocks may be explained by that policy.⁶

It will be noted that stocks in investment trusts show some evidence of being more important for the lowest than for the high income groups. This would be expected, of course, because their major appeal is that they allow individuals with only small amounts of funds to achieve diversification. But it is interesting to note that these institutions find shareholders throughout the range of incomes: in the higher income groups, individuals with twenty or more different issues were frequently found to be holders of some investment trust stocks.

Table 28 shows the distribution of the book value of holdings of untraded issues by industrial classification and by income group of holder. The make-up of the industry groups for untraded stocks differs somewhat from that for traded stocks; for instance, the transportation group includes mainly transfer companies and local bus lines, whereas in the case of traded stocks it consists predominantly of interstate carriers, such as rails and airlines. Furthermore, the data on holdings of untraded stock cannot be taken as indicative of differential total investment in various industries by different income groups because much of the investment of the lower income group in particular industries takes the form of an interest in unincorporated businesses—for example, unincorporated retail trade concerns.

But that would not be true in the case of untraded bank stocks, which make up a large proportion of the holdings of the low and

⁶ See *Financial Policy of Corporations*, by Arthur Stone Dewing (New York, 1941), 4th ed., Vol. II, pp. 1216-20.

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TABLE 28
 Distribution of Untraded Stock Holdings by Industry of Issuing Corporation,
 for Income Groups of Wisconsin Individuals, 1949

STOCKHOLDER'S INCOME GROUP	INDUSTRY OF CORPORATION							TOTAL
	Manufacturing	Retail and Wholesale Trade	Construction	Communication, Public Utility	Banking	All Others		
\$0-4,999	33.0%	7.4%	...	2.0%	40.0%	17.6%	100.0%	
5,000-9,999	27.3	24.1	0.4%	0.6	34.8	12.8	100.0	
10,000-19,999	53.1	16.1	1.4	2.3	19.2	7.9	100.0	
20,000-49,999	56.5	18.6	2.7	2.6	9.8	9.8	100.0	
50,000 and over	78.1	4.4	2.0	0.6	4.1	10.8	100.0	
All income groups ^a	55.6%	14.7%	1.6%	1.6%	15.8%	10.7%	100.0%	

Computed from Table A-13 and includes identifiable issues only.

^a Includes, besides the specified income groups, the small group reporting negative income, for whom the distribution was: manufacturing, 9.2%; trade, 75.8%; transportation, etc., 2.5%; banking, 12.5%.

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middle income groups. To some extent the prominence of such stocks in their holdings may result from an overestimate, due to confusion on the part of taxpayers as to whether returns on time deposits constituted interest or dividend income. On the other hand, it is a fact that in rural areas local bank stocks are more easily available as an investment outlet than are other types of securities; they are generally regarded as conservative, and the local bank in rural areas looms large as a business. The fact that income levels are somewhat lower in rural communities than in cities and metropolitan areas may partly account for the prominence of bank stocks in the untraded holdings of individuals with lower incomes.

As with traded issues, so with untraded issues the tendency for investment in manufacturing companies to make up a higher proportion of the value of holdings for successively higher income groups is probably due in part to the fact that extremely high incomes arise mainly in manufacturing activities, where business interest holdings are particularly prevalent.

Risk Rating of Stockholdings

It is frequently said that the individual income tax, and particularly its treatment of capital gains and losses, places serious restraints on the willingness of individuals to make investments involving a relatively high degree of risk. Since it is thought that individuals in the lower income group are scarcely in a position to participate at all heavily in this investment function, and that it therefore devolves on the upper income groups, special interest attaches to such information as can be had on the actual practices of high versus low income individuals in choosing among investments with varying degrees of risk. The availability of agency ratings for about 75 per cent of the dollar value of traded stock issues held by Wisconsin individuals permits us to examine the relation between the incomes of stockholders and the quality of at least the major portion of their holdings of traded stocks. The analysis, although it casts no light on what the situation would have been if a progressive income tax had not existed in 1949, may be expected to exhibit preference patterns of different income groups in 1949 with respect to risk taking in one area of investment.

The quality ratings used are those published monthly by the Fitch Publishing Company, based primarily on the stability and prospects of dividends. It is not entirely clear whether or to what

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extent the ratings are also influenced by considerations of stability of market value, where market and dividend prospects differ widely. In any event, the Fitch ratings do not attempt, as do some others, to show whether stocks are over- or underpriced with respect to future prospects. Stocks are classified in twelve categories based on estimates of future dividends. No ratings are assigned to issues of banks, finance companies, investment trusts, etc., because of non-recurring items which affect their operating experience. Small issues, on which data sufficient for rating purposes are unavailable, are also excluded.⁷

Issues of marketed stocks for which Fitch ratings were available were classified according to their December 1949 ratings. Holdings of issues in the three lowest grades (DDD, DD, and D) were virtually nonexistent in the sample: only a very few traded stock issues in 1949 were in financial difficulties and therefore warranted those ratings; as such issues rarely pay dividends, few of them were found in the sample. Because of the small number of such issues and the circumstances surrounding their low ratings, they are ignored in the subsequent analysis. In all, the analysis covers slightly over three-fourths of the total value of traded stock holdings surveyed.

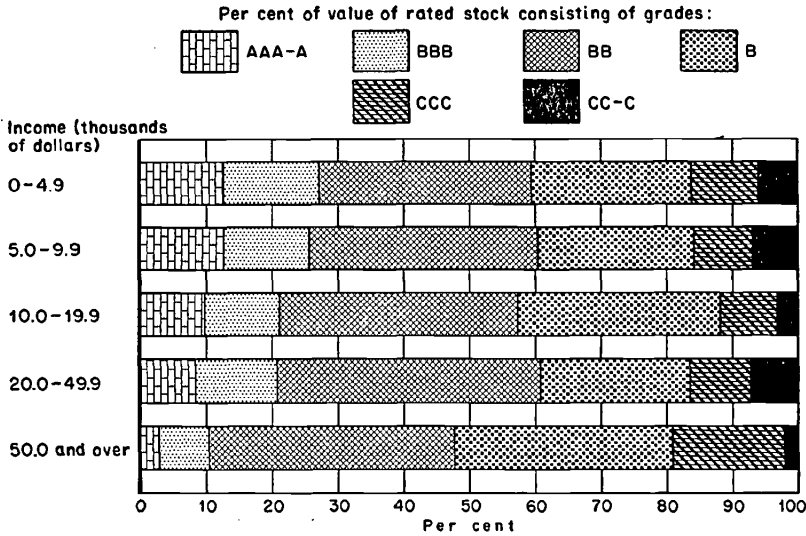
Chart 12 shows as of December 1949 the distribution of the total dollar value of rated stock holdings in each income group according to the Fitch rating grade. The importance of stocks in the four highest grades (AAA, AA, A, and BBB) declines consistently for successively higher income groups. On the other hand, the importance of stocks in the three lowest grades (CCC, CC, and C) decreases to the \$20,000 income level and then increases. Furthermore, medium grade issues make up a smaller proportion of the dollar value of rated stock holdings for the lower income group than for others. Because the effect of income level upon the risk aspect of investment choices is not entirely clear, it was thought worth while to devise an index to register the net effect of these trends and the approximate amount of the shifts in quality which are found to occur along the income scale. Such an index is computed by assigning numerical equivalents to each Fitch rating (i.e. AAA equals 1, AA equals 2, A equals 3, BBB equals 4, etc.) and then weighting the dollar value of stockhold-

⁷ For a detailed description of the criteria used to assign ratings see *The Fitch Stock Record*, January 1950, p. 6.

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CHART 12

Distribution of Stockholdings by Fitch Agency Rating, 1949, for Income Groups of Wisconsin Individuals



ings of each rating grade by the numerical equivalent for that grade, and aggregating and dividing through by the dollar value of rated stock held for each income group.

The attempt to assess the risk-taking propensities of different individuals is beset with all of the numerous difficulties which the limitations of the sample data involve, especially the absence of information on holdings of non-dividend-paying stocks. In addition, the method used to compute the indexes designed to measure risk taking makes certain assumptions which it is well to review before reporting the findings of the analysis. First, it is necessarily assumed that the risk position of individuals and of income groups is determined solely by their holdings of traded stocks bearing agency ratings. That, however, is an objectionable assumption, since an individual having a bank account and government bonds in addition to CC stock is in a substantially more conservative position than if the CC stock were his only investment. Furthermore, even within the classification of traded stocks, certain issues such as those of banks and investment trusts had no rating and thus were not included in the calculation. But the assumption avoids the knotty problem of ranking assets of different types, such as sav-

ings accounts, rated stocks, and closely held stocks, on the same quality scale.

The second assumption is somewhat more technical: a linear arithmetic relationship is assumed to exist between agency rating grade and true quality. Thus, it is assumed that the difference in quality between BBB and BB stocks is the same as between BB and B stocks, so that not only do agency ratings serve to rank the various issues of stock according to quality but the successive ratings bear a constant quantitative relationship to each other. We clearly do not know whether the assumption is valid or not, because no objective measure of risk exists with which agency rating grades can be compared. If the relationship of current dividends to market price (i.e. yield) is used as a standard of comparison in the belief that successively poorer grades of stock bear successively higher yields, the assumption appears to be untrue because the relation between yield and agency rating does not appear to be linear. A tentative explanation of the nonlinearity of the relationship will be advanced in a later section.

The practical importance of this assumption, that the relationship between agency rating grade and true quality is one of arithmetic linearity, is evident when one considers the method of constructing measurements of risk taking. If an individual or an income group has \$1,000 in BBB stocks and a like amount in B stocks, the true average risk of the individual or group will be BB only if the difference between BBB and BB stocks is equivalent to the difference between BB and B stocks, absolute risk levels notwithstanding. Since in computing indexes a constant arithmetic scale was used to signify varying grades of risk, the stated assumption is implicit in the analysis. To make any other assumption would require more evidence than is presently available.

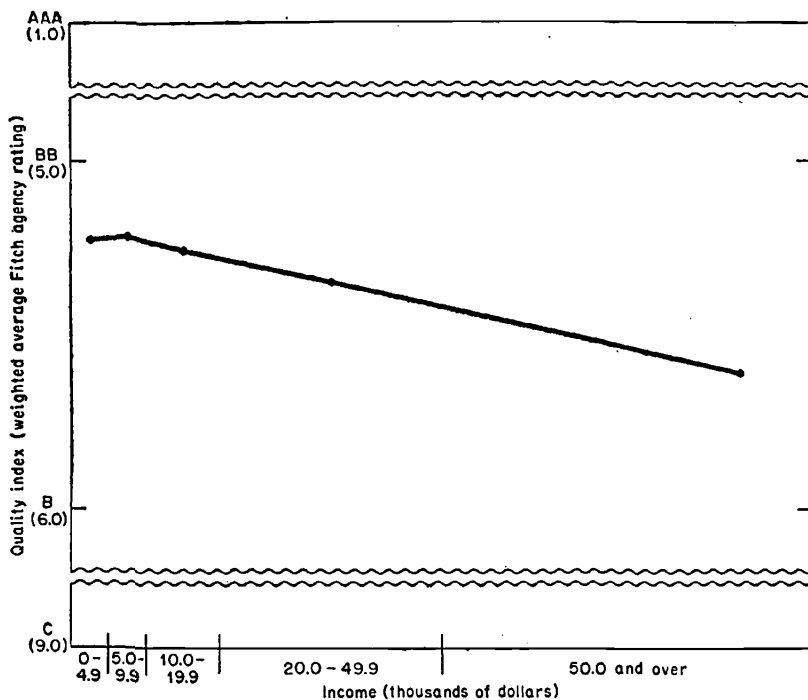
Chart 13 shows the behavior of the quality index. There is a fairly constant downward trend in the average agency rating grade, symbolizing a general decline in quality of stockholdings as income increases. The decline in quality of stockholdings for successively higher income is not as great, however, as might be expected: the net difference in quality of aggregate portfolios of rated stocks between the lowest and highest income groups is only about two-fifths of one rating grade.

One possible reason that we do not find greater differences in risk propensities between income groups is that many small holders

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CHART 13

Relationship between Income Level and Quality of Holdings for Wisconsin Individuals Owning Traded Stock, 1949



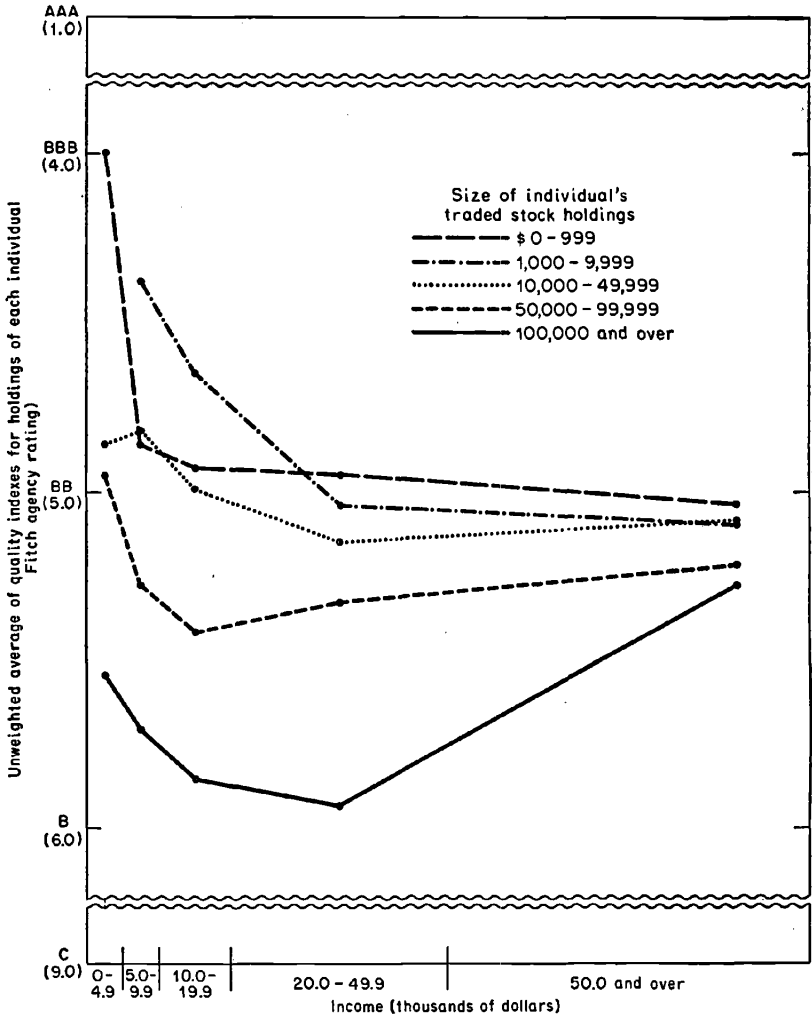
Based on Table A-14. Readings centered at midpoints of income class intervals, except that for the \$50,000 and over class the approximate mean, \$90,000, is used.

of stock appear to hold relatively risky positions and that small holders make up a larger proportion of all stockholders in the lower income group than in the upper ones. In Chart 14 the individuals in the several income groups have been classified as to risk position by a quality coefficient calculated separately for each stockholder. This procedure weights each stockholder equally regardless of the amount of rated stock held. Average quality coefficients were computed for different size-of-holding groups within income groups, to allow the examination of the effect of income independently of the effect of size of stockholdings. In general, within each subgroup of investors having the same amount of traded stocks, the higher the income level the lower is the average rating grade, symbolizing a decline in quality—a greater assumption of risk—as income rises. This relationship is most nearly con-

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CHART 14

Relationship between Income Level and Risk Position for Wisconsin Individuals Grouped by Size of Holding of Traded Stocks, 1949



Based on survey of tax returns. Readings are centered at midpoints of income class intervals, except that for the \$50,000 and over class the approximate mean, \$90,000, is used.

sistent in the case of stockholders with incomes of less than \$50,000; beyond that level the average risk decreases for individuals holding less than \$50,000 of traded stocks. Within any single income group, however, average risk is generally higher for in-

dividuals holding small amounts of traded stocks than for those with larger holdings.

This last finding—that individuals with small amounts of traded stock holdings have positions of greater risk, on the average, than individuals with larger holdings, income held constant—is of considerable interest. One might expect to find small holders choosing very conservative investments and large holders within the same income groups holding riskier investments. Yet economic literature and experience abound with illustrations of individuals risking small amounts in the hope of large gains.⁸ Lotteries are frequently justified on the basis that they give a poor man an opportunity to take such risks. It is not unlikely that the stock market has a similar appeal to certain persons and that these individuals are of some numerical significance in the low income groups, although the aggregate dollar value of their holdings is slight compared with that of more conservative investors in the same income stratum. Any generalization about the influence of the income level of individuals upon their propensity to assume risk is probably incomplete without acknowledging the fact that the lower and middle income groups contain proportionately more individuals with extremely risky or extremely conservative investment positions than the higher income groups do. This is shown in Chart 15.

In summary, the analysis of the relation between the income level of an individual and his risk position with traded stock holdings suggests that the highest income group holds relatively greater amounts of stock involving higher-than-average risk than any other income group. The fact that the over-all difference in risk position between the lowest and highest income groups is not great may be due to any number of circumstances: the effect of the income tax; the fact that many of the small holders of traded stocks who are relatively numerous in the lower income group appear to hold positions more speculative than the average; or the fact that certain conservative stocks which are primarily concentrated in the lower income group, such as stocks of investment trusts, were not rated and therefore were excluded from measurement.

Diversification

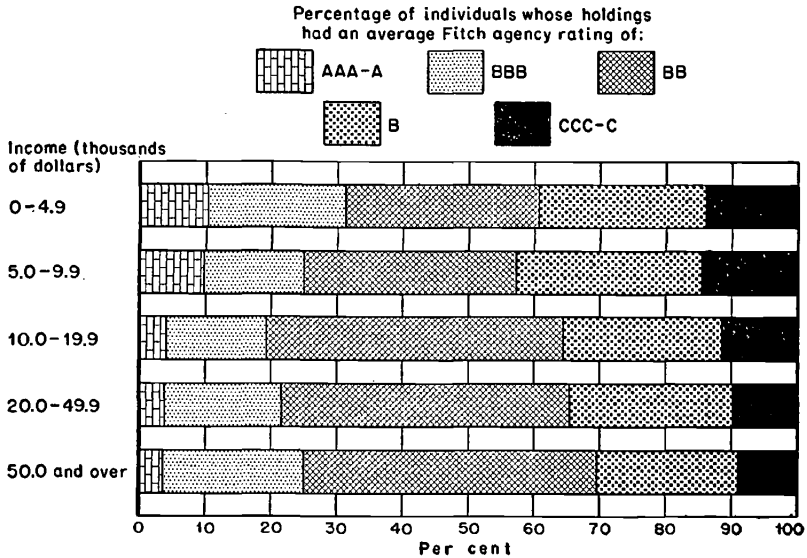
How many different issues are held by the average stockholder and how does diversification vary with income?

⁸ For a recent theoretical discussion of this phenomenon see "The Utility Analysis of Choices Involving Risk," by Milton Friedman and L. J. Savage, *Journal of Political Economy*, August 1948, pp. 279-304.

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CHART 15

Distribution of Holders of Rated Stock by Risk Position, for Income Groups of Wisconsin Individuals, 1949



In measuring degree of diversification, number of issues rather than number of corporations in which stocks were held was the criterion used, though it involved counting twice those corporations in which an individual held two classes of stock. If both husband and wife had holdings in the same issue these were counted but once, despite the fact that they might be two separate and distinct holdings.

The average number of issues held, as well as the percentage of holders with only one issue, is shown in Table 29 for income groups and also for groups of individuals ranked according to the amount of their holdings of traded stocks. The average number of traded issues held increases both with income and with size of holding, except that there is a slight drop in the average in the highest class.

It should be pointed out, however, that indications from the Wisconsin income tax returns on the average number of issues held were high as compared with those of other surveys. The 1949 Survey of Consumer Finances, for example, found that "roughly half of the spending units who reported owning [publicly traded] stock stated that they had invested in only one corporation; ap-

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TABLE 29

Relation of Average Number of Issues Held, and of Percentage of Holders with Only One Issue, to Income Level and Size of Holding for Wisconsin Individuals Owning Traded Stock, 1949

<i>Characteristics of Holder</i>	<i>Average Number of Issues Held</i>	<i>Percentage of Holders with Only One Issue</i>
<i>Income</i>		
\$0-4,999	3.8	43.6%
5,000-9,999	5.5	35.1
10,000-19,999	9.4	26.0
20,000-49,999	12.5	16.5
50,000 and over	18.1	13.7
<i>Size of Traded Stock Holdings</i>		
\$1-499	1.2	86.1
500-999	1.6	56.0
1,000-4,999	2.8	31.5
5,000-9,999	5.6	10.5
10,000-19,999	9.1	10.7
20,000-49,999	15.0	1.2
50,000-99,999	21.7	1.0
100,000-999,999	39.3	5.5
1,000,000 and over	35.0	0
All holders of traded stock ^a	5.4	38.3%

Based on survey of tax returns.

^a Includes individuals reporting negative income, for whom the average number of issues was 14.9 and the proportion with only one issue 25.0%.

proximately one-third held stock in from 2 to 10 corporations; and less than one-tenth owned shares in 11 or more corporations.”⁹ In comparison, the Wisconsin data show that 38 per cent of the tax filers reporting ownership of traded stock held only one issue, almost half held 2 to 10 issues, and about 12 per cent held more than 10 issues.

But both of those surveys indicated greater diversification than appeared in a Treasury survey of federal income tax returns for 1936, which found that 62 per cent of the stockholders with net incomes over \$1,000 or \$2,500 (depending on marital status) and under \$5,000 received dividends from one corporation, 34 per cent from 2 to 9 corporations, and about 4 per cent from 10 or more corporations.¹⁰ The Treasury survey was confined, however,

⁹ “1949 Survey of Consumer Finances,” *Federal Reserve Bulletin*, October 1949, p. 1191.

¹⁰ *The Distribution of Ownership in the 200 Largest Nonfinancial Corporations* (Temporary National Economic Committee Monograph 29, 1940), p. 12.

to individuals receiving net incomes of less than \$5,000 and dividends of less than \$10,000.

Yield

There is a considerable body of evidence which suggests that the relation between stock yields and quality, as ordinarily measured, is not always one of simple linearity. In other words, one cannot say that the best grade of stock has the lowest yield, intermediate grades have somewhat higher yields, and the riskiest stocks the greatest yields. On the contrary, while yields increase from the prime to the intermediate grades of traded stock, the poorest grades appear actually to pay lower yields (in terms of the ratio of dividends to market value) than do issues of intermediate quality.

This relationship is shown in Chart 16 for the sample of dividend-paying stocks held by Wisconsin individuals in 1949. The irregular variations which will be noted in the yields of high quality stocks are doubtless due to the small number of cases in some of these groups, but the decline in yields on stocks with ratings lower than B is sufficiently regular in shape to warrant confidence that it reveals a true condition. This backward-turning yield curve, moreover, is not simply a phenomenon unique to the Wisconsin sample; on the contrary, it appears to be characteristic of stock listings for 1949 taken at random from the investment manuals. Furthermore, it appears to be true of stocks traded on the regional exchanges and over the counter as well as of those traded on the major exchanges, although more of the former group fall in the extreme right-hand segment of the curve.¹¹

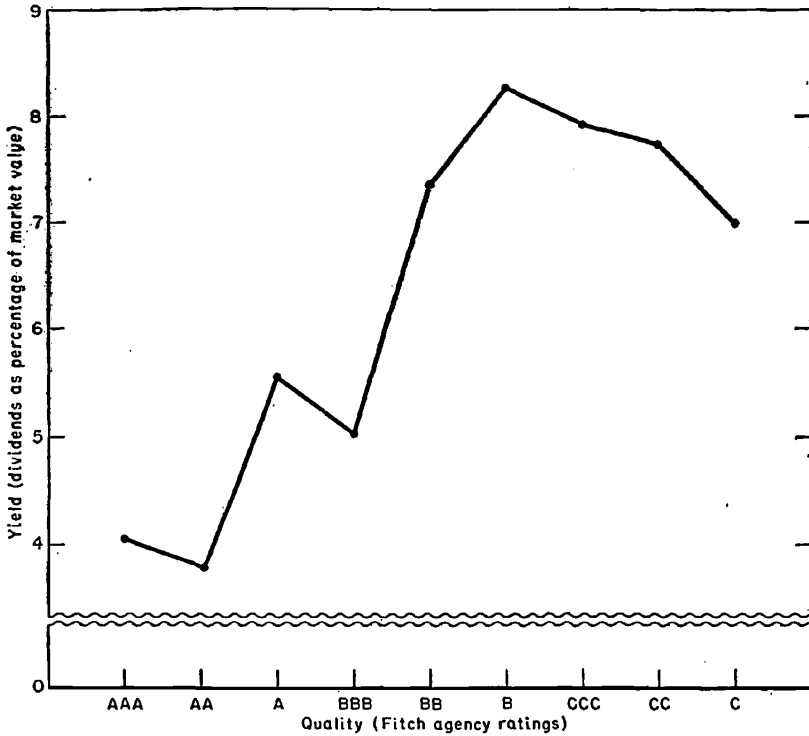
The reason for this behavior is not easy to discern. Stocks of the poorest grades show much greater diversity of yield than do medium and high grade stocks. On the one hand, low grade issues include stocks of firms whose growth possibilities are comparatively severely limited to the occurrence of chance events, such as mineral discoveries. For the most part those appear to be high-yielding securities. On the other hand, also among the low grade issues are

¹¹ Friedman and Savage suggest that the presence of individuals desiring high returns on their investments in numbers that are large in relation to the supply of investments offering such chances may result in higher returns for moderately risky assets than for assets having either little or much risk, essentially the condition suggested by the backward-turning yield curve in Chart 16. (*Op. cit.*, p. 301.)

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CHART 16

Relationship between the Quality and Yield of Rated Stock Holdings of Wisconsin Individuals, 1949



Based on survey of tax returns.

stocks of young industries such as television, though these have extremely low yields if the ratio of dividends to market price is the measure used. Some bias may have been introduced into the analysis by the fact that corporations encountering financial difficulties may immediately cease to make dividend payments, while new firms with shaky finances but prospects for growth may find it expedient to make small dividend payments in order to safeguard their record in case future external financing is sought. Thus, our sample of low grade, dividend-paying stocks would have a bias toward issues of new firms with growth possibilities but with small current dividend yields. Although it cannot be determined from the data whether low grade stocks are commonly overpriced as compared with intermediate and high grade stocks, it would appear

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in any event that the market, at least in 1949, was more optimistic about such issues than the rating agencies were.¹²

Investigation of the relation between investors' incomes and the yields from their holdings of equity securities is considerably hampered by the fact that yields for the sample have been measured as of 1949, whereas yield might well be measured for a period longer than a year and possibly should be defined so as to take into consideration any realized or unrealized gains or losses occurring since the purchase date as a result of changes in capital values.

As an illustration of this last point it may be well to examine one feature of the current income tax structure. It has been suggested that the liberal provisions regarding taxation of long-term capital gains will encourage high income individuals to purchase the stocks of corporations which retain most of their earnings. The argument assumes, of course, that market price will rise proportionately with the rise in book value occasioned by the retention of earnings. If the tax treatment of capital gains were important, as has been suggested, in determining the behavior of investors, one would expect yields figured as the ratio of dividends to the value of stock held to decline for successively higher income groups. Table 30 appears to confirm that thesis except in the case of individuals with incomes of \$50,000 or over, for whom the yield on traded stocks is higher than for any other group. One would expect persons in the top income group to be benefited most by the provisions of the capital gains tax; accordingly, the presence of extremely high yields on the marketed stocks held by that group casts doubt upon the validity of the thesis as a sole explanation of investor behavior. At least some part of the irregular behavior of the average yield obtained by individuals in the top income groups is probably associated with the phenomenon of the backward-turning yield curve, since the holdings of stock by the highest income group could not produce a yield higher than the average for all income groups unless they included issues with rating grades having the highest average yields—i.e. not the riskiest but the moderately risky stocks.

With untraded stocks the difficulty in determining actual yields

¹² A somewhat similar condition appears to prevail in the market for farm land. Several studies indicate that land poorly adapted to the type of farming carried on in the area is valued higher in relation to financial returns than well-adapted land. See *Mortgage Lending Experience in Agriculture*, by Lawrence A. Jones and David Durand (Princeton University Press for the National Bureau of Economic Research, 1954), Chapters 8 and 9.

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TABLE 30

Yields of Traded and of Untraded Stock Held, for
Income Groups of Wisconsin Individuals, 1949

INCOME	TRADED STOCK ^a		ALL TRADED	UNTRADED STOCK ^b		ALL UN- TRADED
	Preferred	Common		Preferred	Common	
\$0-4,999	5.13%	7.28%	6.97%	3.92%	3.21%	3.34%
5,000-9,999	4.80	6.83	6.56	7.55	3.10	3.49
10,000-19,999	4.94	6.70	6.51	5.09	4.26	4.33
20,000-49,999	4.61	6.47	6.28	5.69	4.92	4.97
50,000 and over	4.34	7.31	7.15	6.12	5.10	5.12
All income groups ^c	4.84%	6.87%	6.63%	5.49%	4.57%	4.63%

Computed from Table A-11. Yields are expressed as the percentage ratio of dividends to market or book value of stock.

^a Based on market value.

^b Based on unadjusted book value and includes identifiable issues only.

^c Includes, besides the specified income groups, the small group reporting negative income, for whom the yields on traded stock were: preferred, 4.42%; common, 5.63%; all, 5.48%. All untraded stocks held by this group were common stocks, the average yield being 7.35%.

is even greater than for traded stocks, since the yield on the investment is obscured by the fact that about two-thirds of the value of such stock is owned by individuals also receiving wages or salaries from the issuing corporation.¹³ In many such cases it is impossible to separate wages of management from profits received in the form of dividends; one would expect, nevertheless, that if the possibility of avoiding high personal tax rates through retention of earnings were influencing investor practice the evidence would be found most clearly in holdings of stock in closely held corporations. Instead, as Table 30 shows, higher income individuals received a higher yield on their untraded stock than did lower income individuals.

Average Turnover of Holdings

The data available from the capital gains and losses schedule of the tax returns make it possible to measure the market activity of different economic groups. The measure is one-sided in that only sales are recorded, but it may be presumed that under normal circumstances most investors sell in order to acquire another asset, frequently to buy another stock. In certain cases that is not so,

¹³ The levels of yields received on traded and untraded stocks are not comparable, since unadjusted book value was used to compute the yield on untraded stocks. Adjustment to market value equivalent considerably raises the yield indicated for untraded stock but does not substantially change the differences between income groups.

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of course: for example, older investors may be net sellers, on balance, while younger individuals may be net purchasers. These would tend to be offsetting conditions, however, and figures on turnover computed from sales information as listed in the capital gains schedules of the tax returns may give at least a rough indication of market activity.

The average turnover for different income groups of stockholders may be measured by dividing the total sales price of stocks sold by them during 1949 by the total value of their average holdings of stocks. Thus we obtain for each group the percentage of average holdings sold during the year. Such a measure of turnover lacks precision for two reasons: First, stocks that are sold are valued at their actual sales price, while average holdings are computed at the unweighted mean market price during 1949. Second, average holdings are estimated only for stocks paying dividends during 1949, while the sales figure includes marketed stocks which did not pay a return to the investor. In short, the concepts of valuation in the numerator and denominator differ somewhat, and one small class of stocks is represented only in the numerator.

Table 31 reveals that traded stocks sold during 1949 represented

TABLE 31
Estimated Turnover of Traded Stock Holdings
for Income Groups of Wisconsin Individuals, 1949

<i>Income</i>	<i>Turnover</i>
\$0-4,999	6.6%
5,000-9,999	8.5
10,000-19,999	8.1
20,000-49,999	6.9
50,000 and over	4.1
All income groups ^a	6.7%

Computed from Tables A-3 and A-16. Turnover is the percentage ratio of the sales price of traded stocks sold during the year to the average market value of traded stock holdings, 1949.

^a Includes, besides the specified income groups, the small group reporting negative income, for whom turnover was 3.9%.

only about 7 per cent of the average total value of such stocks held by Wisconsin individuals filing tax returns for that year. The comparable figure for untraded stocks was 4 per cent. Average turnover of traded stock was slightly higher for individuals having incomes of from \$5,000 to \$19,999 than for income groups above

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or below that range. According to 1949 data, individuals with incomes of \$50,000 and over had the lowest rate of traded stock turnover of any income group.¹⁴

In 1949 one-third of the value of traded stocks sold was comprised of issues which had been held for less than one year, and such briefly held securities made up a larger part of sales for the income group under \$5,000 than for others (Table 32). Par-

TABLE 32

Distribution of Traded Stock Holdings Sold in 1949 by Length of Time Held,
for Income Groups of Wisconsin Individuals

LENGTH OF TIME HELD	INCOME			ALL INCOME GROUPS
	\$0-4,999	\$5,000- 9,999	\$10,000 & Over	
6 months and under	18.6%	14.9%	13.7%	14.7%
6 months to 1 year	26.1	27.3	14.1	19.3
1 to 2 years	32.1	21.9	29.6	27.5
2 to 5 years	17.2	12.5	21.6	20.3
5 to 10 years	4.5	7.0	12.4	9.1
Over 10 years	1.5	16.4	8.6	9.1
Total	100.0%	100.0%	100.0%	100.0%

Computed from Table A-16.

ticularly noticeable is the fact that about 20 per cent of the value of stock sold by the upper income group (\$10,000 and over) represented issues which had been held five or more years, whereas the comparable figure for the lower income group was only 6 per cent.

In summary, the data show that average turnover is slightly greater in the income ranges below the \$50,000 level than above it, and that successively higher income groups tend to hold shares for longer periods of time. Turnover figures, of course, are greatly influenced by a relatively few persons who constantly trade in and

¹⁴ There are considerable differences in turnover among stocks of different agency rating grade. The prime risk issues had the lowest turnover and the relatively risky shares the highest. The turnover for each agency rating grade for all stockholdings in the Wisconsin sample was as follows:

AAA—None	BBB—5.0%	CCC— 8.6%
AA —None	BB —6.6	CC —17.1
A —6.0%	B —7.8	C —23.6

This finding compares roughly with a tabulation of reported turnover of stocks traded on the New York Stock Exchange in 1948 by agency rating grade prepared for the Securities and Exchange Commission. Turnover of stocks in the Wisconsin sample was somewhat smaller than that found by the SEC tabulation, except in the case of stocks of grade A.

out of the market, yet whose holdings at any one time may not be large. Thus, sales by a small number of active traders in the low and medium income groups may bulk somewhat larger in relation to the total holdings of those groups than do sales by a larger number of less active traders in the higher income groups when compared with the group's holdings. In addition, one would expect to find in the topmost income group less pressure for liquidation because of unforeseen emergencies than in the low and middle groups, and greater incentive for holding shares over a somewhat longer period because of the desire to obtain long-term gains.

Price per Share

Do individuals in the lower income groups have a greater preference for comparatively low-priced shares than individuals with higher incomes? This is a question of some practical interest and importance because if price preferences appear to be associated with income levels, their relationship might warrant some attention in designing new security issues to appeal to a particular stratum of society. Furthermore, the relationship between absolute price level of corporate stock shares and income level of holder, if significant, may have implications for problems involving price movements of particular issues. For example, a stock split may lead to a different distribution of stock among income stratifications of stockholders which would also have some effect upon price per share as revealed in a comparison of the new with the previous price, the latter having been adjusted to reflect the split. Similarly, the observed tendency for low-priced shares to rise more in a bull market and decline more in a bear market than medium- and high-priced shares¹⁵ may be associated with changes in the market activity of the lower income groups, if these groups do, in fact, prefer low-priced stocks. Therefore an investigation of the relationship between income level of holder and price per share of stocks held appears warranted.

Chart 17 shows the distribution of Wisconsin stockholders in

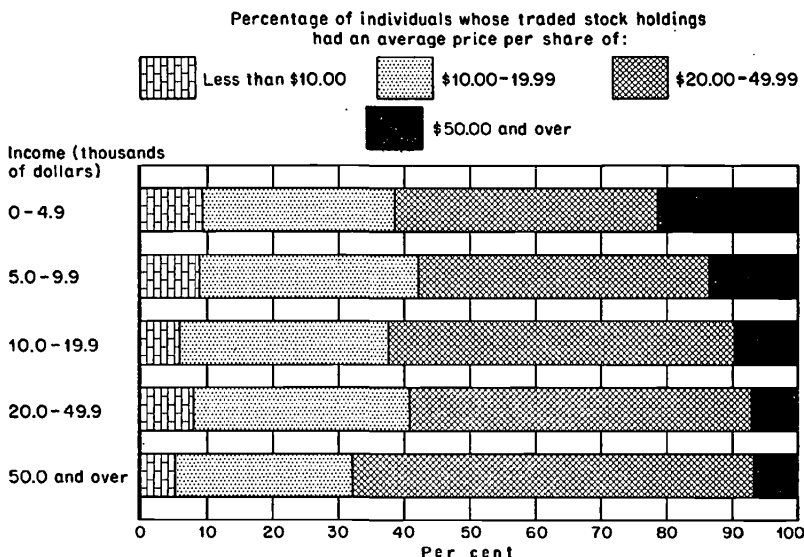
¹⁵ This principle, which has been termed the "square root rule," is discussed by Zenon Szatrowski in "The Relationship between Price Change and Price Level for Common Stocks," *Journal of the American Statistical Association*, December 1945, pp. 467-83. It has been pointed out, however, that quality rather than price per share seems to be the major determinant of the degree of fluctuation in stock prices. See "Quality versus Price as Factors Influencing Common Stock Price Fluctuations," by John C. Clendenin, *Journal of Finance*, December 1951, pp. 398-405.

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various income ranges according to the average price per share of their traded stock holdings. As individuals with progressively higher incomes are considered, the proportion who have holdings with either an extremely low or an extremely high average price per share appears smaller. In other words, a relatively greater number of individuals in the higher income groups have stockholdings with moderate average price per share (\$20.00 to \$49.99) than

CHART 17

Distribution of Holders of Traded Stock by Average Price per Share of Their Holdings, 1949, for Income Groups of Wisconsin Individuals



Based on Table A-17.

in the lower and middle income groups. The complement of that tendency—i.e. a decline, with rise of income level, in the proportionate number of persons having shareholdings in other price-per-share ranges—is not confined to the low price-per-share component alone; in fact, the decline in the case of holdings with high average price per share (\$50 and over) is considerably more impressive.

It is not easy to explain these findings, but one may hazard a guess on two factors which may jointly be important. In the first place, there is a close association between the price per share of a stock issue and its quality. As a rule, prime risk stocks sell at relatively high prices per share while progressively lower grades

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of stocks have progressively lower prices per share. Secondly, as was pointed out earlier, somewhat sizable proportions of individuals in the lower and middle income groups hold either extremely speculative or extremely conservative positions in regard to their stockholdings, whereas progressively higher income groups appear to be characterized by proportionately fewer individuals holding either extremely risky or extremely safe positions. Because of the correlation between quality and price per share, we would expect this tendency for reduced extremes in risk position at higher income levels to be manifested in reduced extremes in the distribution of individuals according to the average price per share of their stockholdings. Essentially that is what is observed in Chart 17.

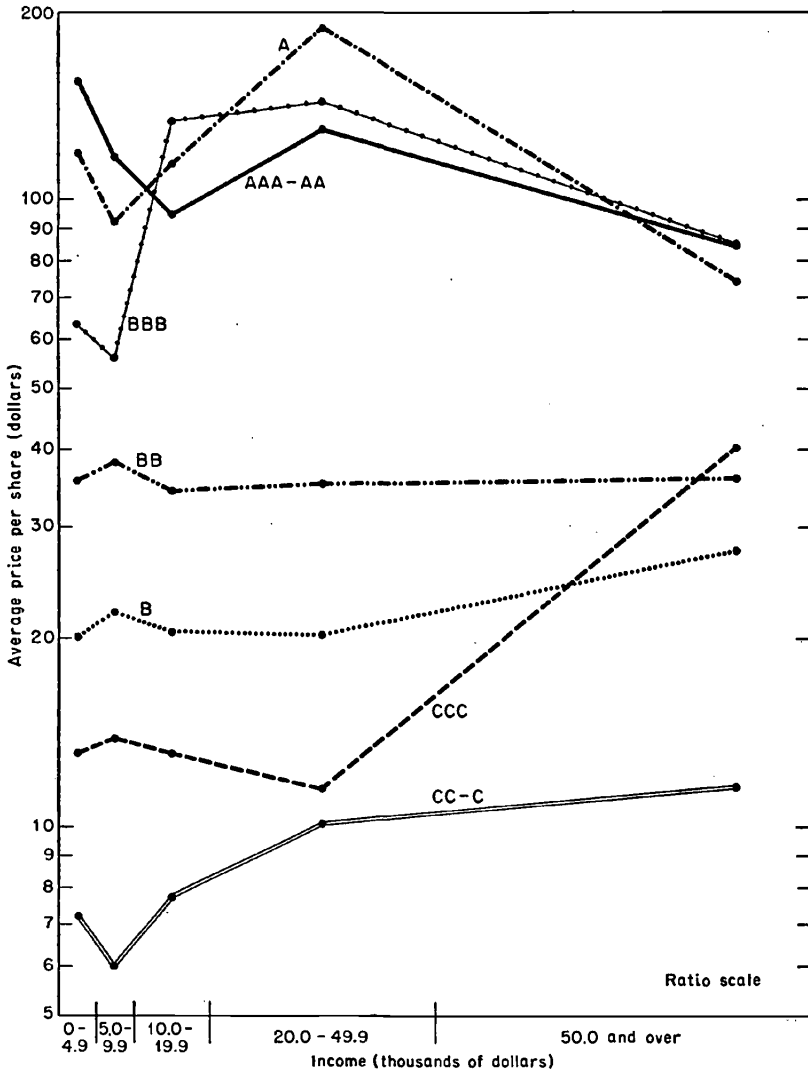
If the surmise just stated is correct, the analysis should advance one step further into an examination of the relationship between income level and average price per share for stocks of similar quality. Thus one might determine whether it is merely the variation among income groups in the quality of stock held which accounts for differences in average price per share of stockholdings, or whether there is a price effect independent of quality. Chart 18 shows the average price per share of stocks with different Fitch ratings for various income levels. Because of the small number of observations for either extremely safe or extremely risky stocks, the two highest and the two lowest grades have been combined. For the better quality stocks it is difficult to generalize about the effect of income upon average price per share; if anything, the highest income group (\$50,000 and over) more than other groups appears to favor the lower-priced stocks among high grade issues. For stock of average quality (BB), price per share appears to be nearly constant at all income levels. It is only with low grade stocks that the low income group appears to prefer, more than higher income groups do, issues selling at a relatively low price per share.

Again it is difficult to explain what is observed. One explanation which seems to fit the facts is that some of the individuals in the lower income group whose position in regard to their stockholdings is relatively speculative not only desire the poorest quality stocks because of their large potential appreciation possibilities but also choose, from among the speculative stocks, those with a low price per share, because of a belief that appreciation possibilities for such issues are even greater—in short, that some individuals seek

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CHART 18

Relationship between Income Level of Holder and Price per Share of Wisconsin Individuals' Holdings, 1949, for Stocks of Different Rating Grade



Based on survey of tax returns. Readings centered at midpoints of income class intervals, except that for the \$50,000 and over class the approximate mean, \$90,000, is used. Stocks are graded by Fitch agency rating as of December 1949.

to compound their speculative activities to a second degree. Whether this surmise is correct cannot be tested by present evidence.

Summary

The principal findings of the chapter are:

1. Income groups differ only slightly in the proportions of the dollar value of their traded stock consisting of issues traded on the New York Stock Exchange, the American Stock Exchange, and in over-the-counter and regional markets. Generally speaking, the proportion held in issues traded on the New York Stock Exchange is slightly higher for the low and middle income groups than for the upper income groups. But if "untraded" stocks are included among issues which find a market over the counter, the difference between income groups is considerably greater because of the concentration of untraded stock in the holdings of the higher income groups.

2. There is a significant shift, along the personal income scale, in the proportion of traded and of untraded stock holdings consisting of preferred as against common shares, with preferred issues considerably more important in the holdings of the lower than of higher income groups.

3. In general, the lower income group holds a greater proportion of the amount of its traded stock in issues of industries which are commonly regarded as conservative investments than the upper income groups do of theirs. Investment trust stock, issues of local utility companies, and American Telephone and Telegraph stock form a greater proportion of the holdings of the lower income group than of the higher income groups. On the other hand, stocks of pulp and paper, iron and steel, nonelectrical machinery, and trade concerns bulk larger in the higher than in the lower income groups. Petroleum stocks, generally regarded as relatively speculative, however, are an exception, being more important in lower than in higher income groups. In regard to untraded issues, bank stocks are important in the holdings of the lower and middle income groups while manufacturing stocks are of greatest importance in the upper income groups.

4. The average risk for different portfolios of issues bearing agency rating grades increases along the personal income scale by about two-fifths of one rating grade from the lowest income group (under \$5,000) to the highest (\$50,000 and over). Within each income group, however, individuals with small amounts of traded stock generally have more speculative positions than do those with larger holdings. One reason that the difference in risk between the

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traded stock portfolios of the lowest and highest income groups is not greater appears to be the fact that the lower income group contains proportionately more small holders with relatively risky positions than the upper income groups.

5. The average number of issues held is greater, and the percentage of individuals holding only one issue is less, for groups with progressively higher incomes and with progressively larger individual holdings of traded stock.

6. The yield obtained in 1949 on traded stock holdings was slightly lower for progressively higher income groups up to the \$50,000 level, but for the topmost income group (\$50,000 and over) the yield exceeded the average for any other group. In contrast, the yield on untraded stock holdings was consistently larger the higher the income group.

7. Individuals with incomes of less than \$50,000 had a slightly greater turnover in their traded stock holdings than did those in the highest income group. In addition, the stock sold by the lower income group had been held for a shorter length of time than that sold by the higher income groups.

8. The lower and middle income groups contained proportionately more individuals whose traded stock holdings had a low average price per share (under \$20) than did the higher income groups. On the other hand, the lower and middle income groups contained a considerably greater proportion of individuals whose traded stock holdings had a high average price per share (\$50 and over). It appears that low quality stocks held by the lower income group have a lower price per share than those held by the higher income groups. In the case of high quality stocks, however, the relationship is apparently reversed.

