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THE COMMON-STOCK-PORTFOLIO PERFORMANCE RECORD OF INDIVIDUAL INVESTORS: 1964-70

GARY G. SCHLARBAUM, WILBUR G. LEWELLEN AND RONALD C. LEASE*

INDIVIDUAL INVESTORS in the aggregate have been consistent net sellers of common stock since the early 1960's. The trend has been away from direct, and toward indirect, investment in such securities.¹ One plausible explanation of this phenomenon is that individuals believe that the returns they can obtain from self-managed portfolios are inferior to those available from portfolios managed by professionals. While the evolving evidence on institutional/professional investment performance is decidedly mixed, it is conceivable that individuals may still consider themselves, and may in fact be, either less well informed, less skillful, or disadvantaged because of higher transactions costs [18, 23]. One obvious way to evaluate this interpretation of the "withdrawal" phenomenon is simply to compare the investment track record of individuals and institutions. We offer here an analysis of a set of data which allows, for the first time, just such a comparison.²

Specifically, we report on the rates of return earned by a large and diverse sample of individual investors from their common stock portfolios over the seven-year interval 1964 through 1970. These rates of return are contrasted to those which would have been generated during the same interval by both naively-selected portfolios of matching systematic risk and investments in a sample of mutual funds. The findings indicate that, on average, the individual investors studied obtained returns commensurate with the amount of systematic risk they assumed, as did the mutual funds in the sample. The argument that professional portfolio managers are more successful in selecting securities than individual investors is therefore not supported by the evidence. These conclusions are seen to be little affected by alternative procedures for rate-of-return measurement, and to be consistent with previous analyses of the investment behavior of the same sample [16, 21] which were undertaken from a different perspective.

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1. This trend has been documented in [2, 5, 14, 18, 20, 23, 24].

2. There have been a number of studies concerned with the performance of institutional investors. These include [8, 11, 12, 13, 17, 22, 25]. Virtually the only available studies of individual investor performance are [2, 4, 9, 10].

I. THE INVESTOR SAMPLE

The data for the investigation consist of common stock transactions and portfolio-balance information for a sample of 2506 accounts drawn from the customer group of a large brokerage house. The firm, whose retail operations and branch-office network are nationwide, made available the complete daily transactions history of those accounts for the period January, 1964, through December, 1970. The sample was selected at random by the authors from the list of all accounts which were open at the firm over that entire period.³ The latter condition was imposed in order to allow a comprehensive secular record of trading behavior, portfolio strategy, and investment performance to be constructed for each customer. The mechanics of the selection process and the demographic profile of the resulting sample are described at length in [15, 16]. As discussed therein, a questionnaire survey of the group showed it to have characteristics very much like those of the broader population of American shareholders [19, 20] and to encompass a desirably wide range of personal economic circumstances and levels of investing activity.⁴ Accordingly, it appears a usefully representative one from which to draw conclusions having general applicability to the individual investor community.

The data obtained consist of the 179,820 common stock transactions which were executed in the sampled accounts during the seven-year study period, plus the account balance statement from the firm for December 31, 1970, for each customer.⁵ The transaction information included trading date, execution price, commission charges, and an indication of whether the trade was on a cash, margin, or "short" basis. For odd-lot trades, the appropriate price differential was computed separately and treated as a transaction cost, as were any relevant securities transfer taxes [21]. The end-of-1970 balance statement, of course, reports all securities positions held in "street name" at the time.

A supplemental file of cash dividend payments, stock splits, stock dividends, and month-end share prices was compiled from standard sources to permit the measurement of the investor group's portfolio performance each month.⁶ That file includes data on all NYSE and ASE common stocks for the period, as well as on some 1200 stocks that were listed on a regional exchange or traded over-the-counter.⁷ It spans the securities which were involved in 96 percent (172,447) of the observed transactions in the sampled accounts; these transactions will be the focus of our investigation. The remaining transactions involved over-the-counter stocks for which data were either incomplete or unavailable. By dollar volume, 99 percent of the group's trading activity is covered [21].

3. A stratified sampling procedure designed to ensure proper geographic representation of the shareholder population [19] was employed.

4. Comparisons of the attributes of the group with those of a "control" sample of the firm's customers selected without regard to account longevity yielded similar indications of consistency in composition [15].

5. Of the 2506 accounts selected in the original sampling, 17 had not traded in equities during the interval in question and were excluded from the investigation. The data analyzed here pertain to the remaining 2489.

6. The authors are indebted to the Wells Fargo Bank for making available its Scholes Price Relative File as one of the key resources in this connection.

7. Month-end "bid" prices were recorded for OTC stocks [21].

II. THE INVESTOR PORTFOLIOS

From these raw materials, the composition and total dollar market value of the beginning-of-month equities portfolio of every investor in the sample was reconstructed for each of the 84 months in the study period. The securities positions were obtained by working backward from the December, 1970 portfolio balance statements through the respective individual transactions records. Stock splits and stock dividends were taken into account in the process. Those positions were then matched with the prices from the supplemental securities data file to determine the various portfolio market values.⁸ The resulting aggregate and average such values derived for December 31 of each year in question are listed in Table 1. As can be seen, the data encompass approximately \$100 million of total equity investment positions throughout the period, or roughly a \$40,000 stock portfolio per investor at any given point in time.

TABLE 1
MARKET VALUES OF THE INVESTOR PORTFOLIOS

Date	Aggregate Value for the Entire Sample (Thousands)	Mean Value per Individual Portfolio
12/31/63	\$ 70,416	\$28,291
12/31/64	78,303	31,460
12/31/65	99,119	39,823
12/31/66	88,783	35,670
12/31/67	123,215	49,504
12/31/68	133,587	53,671
12/31/69	100,562	40,402
12/31/70	89,397	35,917

These reconstructed holdings will inevitably understate the actual equities commitments of the investors in the sample. Thus, some individuals may have owned common stocks which were acquired prior to January, 1964, but not sold until after December, 1970; if the securities were not held in street name on the latter date, they will be invisible to our investigation.⁹ Similarly, some four-fifths of the group reported themselves, in their questionnaire survey responses, to have dealt with more than one brokerage house over the years [15]. Any dealings—and the resulting securities holdings—with firms other than the one which provided the data under present consideration will obviously be equally invisible.¹⁰ While we cannot determine exactly how much of an understatement is involved, there is no particular reason to believe that any biases in our appraisals of investment

8. In the case of short positions, 100 percent margin requirements were assumed.

9. The evidence in [21], which suggests typical holding periods of a year or less for the securities observed in the underlying transactions file, would mitigate some of the concern on this score.

10. The questionnaire replies did reveal, on the other hand, that as of the end of the study period, only one-third of the sample *then* had a relationship with more than one broker [15, 16].

performance are likely to arise on this account. One might reasonably expect that, for every investor who had differential success in his or her observable dealings with the brokerage house at issue here, there is another group who did better with some other firm and/or elsewhere in his or her portfolio.¹¹ Previous tests for a possible "success bias" in the group's trading activities, which included a comparison with the realized investment results of a control-group sample drawn from the cooperating firm's files without imposing a requirement of account longevity [21], would strongly confirm that view.¹²

In any event, our analysis of investment performance is based on the monthly rates of return generated by two "aggregate" portfolios which were formed by combining, for each month, the identified portfolios of all the investors in the sample. Both include the same securities; it is the weighting scheme used for purposes of aggregation which distinguishes the two. In the one case, every individual investor's portfolio is weighted equally while, in the other, each of the individual portfolios is weighted in accordance with its market value in constructing the aggregate portfolio. Thus, rates of return on the former are indicative of the experience of the *average* investor, and the returns on the latter provide information about the *aggregate* experience of the sample.

III. INVESTOR RATES OF RETURN

Four distinct rate-of-return series spanning the 84 months under consideration were constructed for both of the aggregate portfolios described: two before-transactions-cost series and two after-cost ones. They differ in the assumptions employed for their computation, but the figures ultimately derived turn out to be quite similar. All include dividend receipts as well as stock price changes.

In the first instance, the monthly returns were estimated by assuming that all the identified beginning-of-month individual portfolios were held throughout the *entire* month. By this procedure, the rate of return for a given month on every such portfolio was defined as the dollar-weighted average of the full month's rates on the securities comprising the beginning portfolio. Implicit, therefore, is the convention that all portfolio-revision trades took place together on the last day of every month at *end-of-month* prices. The corresponding after-transactions-cost return series was obtained by subtracting the transactions costs actually incurred during the month from the sum of the month's cash dividend receipts and (full-month) price changes, and dividing by the beginning-of-month portfolio market values. These costs, incidentally, were spread fairly evenly over the study interval. The monthly range was from 0.05 to 0.14 percent of beginning total portfolio value for the group; the mean was 0.09 percent per month.

The second method of return calculation imbeds the *actual* prices at which the observed transactions occurred. It involved computing the total price appreciation/depreciation experienced by each investor on his or her trades for the

11. In the "elsewhere" category, of course, might well be additional accounts with the subject brokerage house, perhaps in a spouse's or child's name. Presumably, our random sampling procedure would in fact pick some of those up along the way.

12. We shall return below to those findings.

month¹³ plus that on stocks held throughout the month, adding any cash dividends received, and dividing by initial portfolio value. While this approach also implicitly attributes the *timing* of all transactions to the last day of every month, it does recognize the actual execution prices associated with those transactions. To that extent it provides, perhaps, a slightly better measure of performance in principle, even though in application the findings are not much different. Again, actual recorded transactions costs for each month were recognized in arriving at a corresponding after-costs return series.

Both of these procedures, of course, yield only approximations of the true monthly rates of return on the portfolios examined, if the standard of "truth" is the month's *time-weighted* return. That computation would reflect the actual timing and sequence of within-month transactions in the accounts, would re-value the portfolio upon each event, would calculate a return relative for the interval since the preceding transaction, and would then link those relatives to determine the attendant formal monthly time-weighted rate [17]. Because daily share prices for the some 4000 securities at issue were not available in our data base, however, it was not possible to undertake this detailed analysis.

There is, on the other hand, little reason to suspect that the returns computed here are not very close and unbiased approximations of the "true" returns. Our estimated rates will be exactly equal to the time-weighted rates if the dollar volume of securities purchases and sales in the portfolios is in balance throughout the month. An examination of the record of aggregate securities purchases and sales over the study period for the sample as a whole revealed that the mean monthly dollar difference between the two flows was just 0.1 percent of the mean beginning-of-month portfolio values observed.¹⁴ That difference cannot have much effect on the findings.

IV. MARKET PORTFOLIO AND MUTUAL FUND RETURNS

Four additional return series were developed as representations of the investment performance of benchmark "market" collections of securities. These are comprised of the 1964-70 monthly rates of return on: (1) a value-weighted portfolio of all common stocks listed on the NYSE and ASE; (2) a value-weighted portfolio of those same securities plus all the OTC and regional-exchange stocks for which price and dividend data were available in our files;¹⁵ (3) U.S. Treasury Bills with approximately one month to maturity; and (4) a "zero-beta" portfolio constructed

13. Some of the appreciation occurred from purchase-and-resale cycles completed entirely *within* the month.

14. That is, sales exceeded purchases to that extent, on average. The largest individual month's imbalance was (minus) 1.8 percent.

15. The OTC/Regional data base, of course, is very much sample-specific to the present investigation, since information was obtained only for the stocks that appeared on the investor transactions file at issue. For this reason, the NYSE/ASE portfolio—which has no such arbitrary character—is used as the primary performance standard here. For all practical purposes, however, the two return series are virtually identical, given that listed securities comprise the great bulk of the market value of all securities.

in such a manner that its returns were uncorrelated with the NYSE/ASE composite. The returns recorded for the first two benchmark portfolios were calculated as weighted averages of the monthly rates on the component securities; they include dividend receipts but ignore any transactions costs. The Treasury-Bill return series consists of the sequence of rates that would have been realized by purchasing on the first day of every month the available instrument whose maturity date was nearest the last day of the month, and holding it to maturity.

The zero-beta portfolio returns were estimated using a procedure like that employed by Blume and Friend [3]. The securities listed on the NYSE and ASE were grouped into twenty subportfolios of descending risk, based on prior-period estimates of their respective betas.¹⁶ Within each subportfolio, the securities were weighted in proportion to their market values, and rates of return were calculated for each of the twenty for all 84 months of the study period. These rates were then regressed on the concurrent monthly rates of return on the full NYSE/ASE portfolio to obtain estimates of the betas of the subportfolios. Finally, cross-sectional regressions of the observed subportfolio returns against their derived betas were executed for each month. The intercept from each of those regressions provides an estimate of the rate of return, \tilde{R}_{zt} , on a zero-beta portfolio in month t . Subsequent regressions of the \tilde{R}_{zt} on the NYSE/ASE portfolio returns yielded a correlation coefficient of -0.01 and an estimated (insignificant) beta of -0.011 .

A complementary mutual-fund performance series is considered as well. It addresses the monthly rates of return that would have been experienced had equal investments been made in each of a collection of 63 randomly-selected funds over the period of interest. The included funds represent approximately a 20 percent sample of the members of the Investment Company Institute having investment objectives listed in the "growth" and "growth-and-income" categories, and therefore whose predominant investments were in common stocks rather than fixed-income securities.¹⁷ No load fees or investor commission charges are incorporated in these return calculations, but the funds' own internal management fees and securities trading costs are of course reflected in the figures obtained. The latter were determined from monthly changes in net asset values and monthly dividend distributions to owners.

V. CHARACTERISTICS OF THE RETURN SERIES

The attributes of the consequent investment rate-of-return series are summarized in Table 2. Section A indicates that our assessment of the portfolio returns of the members of the individual-investor sample is little affected by alternative treatments of their within-month securities purchases and sales. Before transactions costs, the arithmetic mean monthly return experienced by the group during the seven years examined is estimated to be 0.84 percent when all transactions are

16. To accommodate possible changes in individual-security betas, the stocks were grouped at the beginning of the study interval and regrouped halfway through that interval (mid-1967).

17. The 63 funds involved account for just under half the total assets under management by ICI members, and their 1964-70 investment performance matches almost exactly that of the Weisenberger fund index [21].

assumed to have occurred at end-of-month prices; when actual trading prices are used, the figure becomes 0.87 percent. This 0.03 percent difference—which, if anything, might be suggestive of some modest skill on the part of the sample investors in the *timing* of within-month trades—appears consistently in the data in both the equal-weighted and value-weighted performance calculations.

TABLE 2
CHARACTERISTICS OF THE RATE OF RETURN SERIES: 1964-70

	Rates of Return:		
	\bar{R}_{jt}	Monthly: $\sigma(R_{jt})$	Annualized \bar{R}^*
A. Individual Investor Portfolio Returns:			
(1) Portfolios Equal-Weighted:			
Full-Month Return Basis, Before Transaction Costs	0.84%	4.81%	10.56%
Actual Trade Basis, Before Transaction Costs	0.87	4.84	10.95
Full-Month Return Basis, After Transaction Costs	0.67	4.81	8.34
Actual Trade Basis, After Transaction Costs	0.70	4.82	8.73
(2) Portfolios Value-Weighted:			
Full-Month Return Basis, Before Transaction Costs	0.75%	4.75%	9.38%
Actual Trade Basis, Before Transaction Costs	0.78	4.77	9.77
Full-Month Return Basis, After Transaction Costs	0.66	4.75	8.21
Actual Trade Basis, After Transaction Costs	0.69	4.76	8.60
B. Market Benchmark Portfolio Returns:			
Value-Weighted Portfolio of NYSE/ASE Stocks	0.65%	3.74%	8.09%
Value-Weighted Portfolio of NYSE/ASE/OTC Stocks	0.66	3.72	8.21
One-Month Treasury Bills (R_{ft})	0.40	0.14	4.91
Zero-Beta Portfolio (\tilde{R}_{zt})	0.30	4.05	3.66
C. Equal-Weighted Portfolio of Growth and Growth/Income Mutual Funds			
	0.72%	4.42%	8.99%

*Defined as: $(1 + \bar{R}_{jt})^{12} - 1$

Before transactions costs, the value-weighted rates of return derived are 0.09 percent per month below their equal-weighted counterparts, implying that in general small portfolios performed slightly better than did large ones during the period. When transactions costs are considered, however, the measured returns are virtually identical due to the relatively higher commission burden on small traders. Thus, the transactions cost "bite" amounts to 0.09 percent per month in the value-weighted case, but 0.17 percent on an equal-weighted basis. Because the standard deviations of all the recorded return series are sizeable, on the other hand, the differences between neither the equal-weighted (average investor) and value-weighted (aggregate investor) series, nor the full-month and actual-trading-price computation bases are statistically significant.¹⁸ The calculated *t* values are on the

18. The standard deviations listed are those of the respective distributions of 84 computed monthly rates of return.

order of just 1.2 for all the comparisons; none satisfy even a 10-percent confidence level threshold.

Corresponding pairwise comparisons between each of the individual-investor return series, and those observed for the value-weighted market equity portfolios and the sample of mutual funds produced similar results. Whether before or after transactions costs, the performance record of the investor sample in any of its versions is statistically indistinguishable from that of the indicated market benchmarks, as well as from the funds' performance.¹⁹ Clearly, the inclusion of OTC stocks in the defined market portfolio has a barely discernible impact on the calculations. In no instance are average investor returns below those of "the market," and only the growth and growth/income mutual fund mean returns surpassed in nominal terms the yields realized by the investor sample—even after deducting transactions costs.²⁰ In all, then, the investment skills of individuals studied appear quite respectable, at least on a preliminary basis.

VI. RISK-ADJUSTED PERFORMANCE CRITERIA

A more rigorous and more complete appraisal of performance results, however, requires that differences in investment risk postures be taken into account as well. For this purpose, risk-adjusted performance measures for both the individual-investor and mutual-fund portfolios studied were obtained by comparing the rates of return earned with those provided concurrently by naively-selected equity portfolios of matching systematic risk. The relevant benchmark rates were generated in the framework of the usual mean-variance model of market equilibrium. Using the two-factor version of the market model, the parameters of the "excess return" equation

$$\tilde{R}_{jt} - \tilde{R}_{zt} = \alpha_j + \beta_j(\tilde{R}_{mt} - \tilde{R}_{zt}) + \tilde{\epsilon}_{jt} \quad (1)$$

were estimated from time series regressions utilizing the 84 monthly return observations available from our investigation interval, where: \tilde{R}_{jt} is the rate of return in month t on the investor or mutual-fund portfolio at issue; \tilde{R}_{zt} is the month- t return on a zero-beta portfolio; \tilde{R}_{mt} is the return on a value-weighted, fully-diversified market portfolio of common stocks during t ; and $\tilde{\epsilon}_{jt}$ is an error term assumed to have the appropriate distributional properties. The estimate of the intercept α_j provides a measure of portfolio j 's risk-adjusted performance over the interval of concern, and that of the coefficient β_j a measure of the portfolio's volatility [1, 3, 6, 7].

The results of such regressions are displayed in Table 3. The estimates shown in the table are based on the the individual-investor portfolio returns calculated from actual within-month securities trading prices, as discussed above, and the market

19. None of the relevant t values approached the critical figures required for as mild a test as a 10 percent confidence level.

20. It is perhaps worth noting that measures of skewness for the individual-investor portfolio, market portfolio, and mutual-fund portfolio return distributions were nearly equal, and all slightly negative.

equities portfolio employed includes only NYSE and ASE listed stocks.²¹ Regressions using investor portfolio returns computed on the alternative end-of-month trading-price basis, and using the full NYSE/ASE/OTC market portfolio construct, yielded virtually identical findings. Such an outcome is not surprising, given the identified close similarities of the various return series involved. It can be seen in the tabulation that there is no instance in which the estimate $\hat{\alpha}_j$ for the period is either much different from zero or statistically significant; the largest figure is a positive 0.14 percent per month (for the equal-weighted, pre-transactions-cost, individual-investor portfolio return series), but the associated t value is only 0.99 in that case. The implication is, therefore, that both the individual-investor and mutual-fund portfolios examined earned returns entirely commensurate with the degree of systematic risk assumed. Neither superior nor inferior over-all performance can be detected in those returns. Importantly, this conclusion holds for individuals both before and after deducting observed portfolio transactions costs.

As an additional test for the sake of completeness, similar performance assessments were undertaken using the single-factor version of the market model. The estimating equation has the form

$$\tilde{R}_{jt} - R_{ft} = \alpha_j + \beta_j(\tilde{R}_{mt} - R_{ft}) + \tilde{\eta}_{jt} \tag{2}$$

where the “risk-free” (Treasury Bill) rate of return, R_{ft} , for month t replaces the zero-beta rate \tilde{R}_{zt} in the expression, and the corresponding new error term is $\tilde{\eta}_{jt}$. While, in the recent literature, this approach to investment performance appraisal has come to be regarded as less appropriate than that of (1), the empirical results shown in Table 4 conveniently happen to duplicate those from the two-factor analysis. None of the portfolios examined generated returns during the seven years

TABLE 3

REGRESSION ESTIMATES OF INVESTMENT PERFORMANCE: TWO-FACTOR MARKET MODEL
(Monthly Rates of Return: 1964-70)

Portfolios	Parameters of:				
	$\tilde{R}_{jt} - \tilde{R}_{zt} = \alpha_j + \beta_j(\tilde{R}_{mt} - \tilde{R}_{zt}) + \tilde{e}_{jt}$				
	$\hat{\alpha}$	$t(\hat{\alpha})$	$\hat{\beta}$	$t(\hat{\beta})$	R^2
Individual Investors, Portfolio Equal-Weighted:					
Before-Transactions-Cost Rates of Return	0.14%	0.99	1.243	61.56	0.979
After-Transactions-Cost Rates of Return	-0.03%	-0.21	1.244	61.50	0.977
Individual Investors, Portfolios Value-Weighted:					
Before-Transactions-Cost Rates of Return	0.04%	0.50	1.248	76.95	0.986
After-Transactions-Cost Rates of Return	-0.05%	-0.45	1.248	76.87	0.985
Growth and Growth/Income Mutual Funds Portfolio	0.01%	0.07	1.173	43.33	0.958

21. It is this portfolio which was used to derive the \tilde{R}_{zt} figures inserted in equation (1).

TABLE 4

REGRESSION ESTIMATES OF INVESTMENT PERFORMANCE: SINGLE-FACTOR MARKET MODEL
(Monthly Rates of Return: 1964–1970)

Portfolios	Parameters of:					
	$\tilde{R}_{jt} - R_{jt} = \alpha_j + \beta_j(\tilde{R}_{mt} - R_{jt}) + \tilde{\eta}_{jt}$	$\hat{\alpha}$	$t(\hat{\alpha})$	$\hat{\beta}$	$t(\hat{\beta})$	R^2
Individual Investors, Portfolios Equal-Weighted:						
Before-Transactions-Cost Rates of Return	0.17%	0.86	1.227	28.70	0.908	
After-Transactions-Cost Rates of Return	0.00%	0.00	1.226	28.75	0.908	
Individual Investors, Portfolio Value-Weighted:						
Before-Transactions-Cost Rates of Return	0.08%	0.50	1.221	30.51	0.918	
After-Transactions-Cost Rates of Return	-0.01%	-0.10	1.220	30.67	0.919	
Growth and Growth/Income Mutual Funds Portfolio	0.05%	0.26	1.101	23.13	0.866	

of our study period which can be distinguished statistically from the performances of naively-selected portfolios of comparable risk.

VII. COMMENTARY AND INTERPRETATION

The evidence therefore indicates that individuals and mutual funds achieved, on average, quite similar levels of risk-adjusted performance; they essentially matched both "the market" and each other. In evaluating that finding, however, it is necessary to consider the market context involved as well as certain other issues which bear on the investment posture of the investor sample. It could be, for instance, that 1964–70 was a particularly good period for the participation of individuals in the equities market. Evidence for the noticeably more volatile stock price conditions of the 1970's—which we are presently in the process of compiling—might conceivably tell a different story. There is, though, no indication that the investment track records of mutual funds relative to the general market have improved materially since 1970 and thereby that a performance gap has opened which might contradict the implications of the current findings. Thus, while the recent market has been a difficult one, it has been so for all the participants.

There is, of course, a possible hidden "bias" which does need to be pointed out in interpreting our results. The individual-investor portfolio returns computed have not been adjusted for the costs incurred in *managing* the portfolios. The responses to our questionnaire survey of the investor sample suggested that the "average" individual spends between five and ten hours per month and approximately \$70 per year collecting information and engaging in the security-selection decision process for his or her portfolio [15, 16]. If a high dollar opportunity cost is attributed to that commitment, the recorded measures of performance for individuals should be adjusted downward commensurately. On the other hand, it may well be that one of the reasons for choosing to manage one's own portfolio is the pleasure derived from the activity itself. Those investors responding to the

questionnaire survey alleged that they did enjoy the responsibility assumed and found the management challenge intriguing [15]. To the extent that such recreational content is recognized, therefore, the true net cost of portfolio self-management may not in fact be very great.

It is also important to emphasize that evidence of the sort presented does not really allow one to settle the question of whether the individual investors studied would have been better off if they had invested in mutual funds rather than managed their own portfolios. An analysis of that issue would require consideration of the contribution of an individual's common stock portfolio to the risk of his or her *total* asset portfolio. The risk effect will depend not only on the β of the stock portfolio alone, but also on the degree of diversification in that portfolio and the extent of the correlation between its returns and the rest of the total-asset collection.²² Since a preliminary examination of the stock portfolios of our investor sample indicates that they are not indeed very well diversified, the more extensive (average) diversification of mutual funds is at least a qualitative argument in favor of the latter.²³ Because the remainder of the total asset portfolio is largely invisible to us, however, we cannot properly assess whether the substitution of mutual fund holdings for the direct equities investments identified would have provided superior *over-all* investment results during the period studied.

Finally, there is the issue of risk preferences. The return-volatility estimates listed in Tables 3 and 4 suggest that the stock portfolios of the individual investor group contained relatively high-risk securities. The inferred betas were in the vicinity of 1.25 whereas for the growth and growth/income mutual fund portfolio a beta of 1.17 was characteristic. Taken together, these figures would imply a greater appetite for risk on the part of individuals in the collection of equities they invest in directly, and one of the rationales for such direct investment may simply be to give vent to that risk preference.

VIII. SUMMARY

We have provided here empirical evidence on the common-stock-portfolio performance record of what we believe to be a representative sample of individual investors, spanning the years 1964 through 1970. The data, which were made available by a large retail brokerage house, encompass approximately \$100 million of continuously-open equities investment positions over the period, and offer one of the first comprehensive opportunities to examine the actual stock-market investment experiences of individuals. The analysis involved reconstructing the beginning-of-month portfolio balances for some 2500 customer accounts for each of the 84 months in question. The associated monthly rates of return were computed and compared, on both a raw and risk-adjusted basis, with the concur-

22. Included in other assets, of course, may well be heavy indirect common stock commitments through pension fund contributions.

23. The individual accounts contain an average of approximately seven different securities at any given point in time, but these holding are often highly concentrated in just one or two stocks. See also [4].

rent returns on naively-selected stock portfolios and with the investment performances of a stratified sample of mutual funds.

The resulting measures of performance revealed that the individuals studied earned equity-investment returns during the 1964–70 period which were not distinguishable statistically—at any of the commonly employed levels of significance—from those available from a passive buy-the-market-and-hold investment strategy, nor from the returns generated by the mutual funds. This conclusion applies whether pre-transactions-cost or post-transactions-cost returns are considered; it is unaffected by the alternative return-weighting and return-definition procedures explored.²⁴ Nowhere in the evidence compiled, then, can much support be found for the argument that institutions are able to produce investment results superior to those of individuals and that the latter are at a competitive disadvantage in the stock market. Explanations for the “withdrawal” of individual investors from the stock market would, on the basis of the findings here, appear to need to be directed toward other aspects of the surrounding investment environment.

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24. The findings portrayed are also consistent with those that emerged from an earlier examination of the data which dealt exclusively with the *realized* returns of the individual-investor sample on their observed investment “round trips”—i.e., completed securities purchase-to-resale cycles, as documented by the 1964–70 transactions file [21]. While the present analysis is more comprehensive in that *accrued* as well as realized profits and losses are recognized, and while a different weighting scheme is employed in aggregating returns across the sample, the implications of the data are quite similar. One difference lies in the identified size of the transactions-cost “bite” involved: it was noticeably larger in percentage terms for the round-trip returns than it shows up here to be, since here the *non-traded* portion of the portfolio is also considered.

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