Commodity Pool Operators and their Pools: Expenses and Profitability

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INTRODUCTION

A comprehensive view of the expenses and profitability of commodity pools operating in the United States during the years 1981 and 1982 is reported in this study. From the annual reports and disclosure documents submitted to The Commodity Futures Trading Commission (CFTC) it was also possible to examine in detail various other questions relating to commodity pools as a whole, as well as to pools of various sizes. We examined the commission/equity and total expense/equity ratios for various pools as well as the distribution of gains and losses for the pools studied. Numerous examples are provided.

The reader should compare our results with those found in earlier studies: Baratz (1982), Campbell (1981), and Irwin and Brorsen (1985).[1] Generally, these studies have been limited to public commodity pools because offering documents and annual reports are more readily available. Most pools surveyed here are private.

Since the files of pool operators subject to enforcement actions were not available at the time our data was gathered from the CFTC, the results should be understood to be somewhat biased toward pools that avoid regulatory difficulty. Also, the files of the CFTC for the remaining pool operators were sometimes incomplete due to missing or misfiled documents which, together with a small number of cases for which the operator had requested confidentiality, further limited the number of pools included. Beyond these normal limitations the study should be understood to be a census of pool operators operating pools at the time the studies were performed, with one pool taken to represent each pool operator, as explained below.

METHOD

Each pool operator file in the CFTC pool operator files for 1981 and 1982 was examined. The first annual report and disclosure document for each pool was designated the sample pool for the operator in question. This was done so that

[1]These authors often use the term "commodity fund" or "commodity futures fund" to refer to a commodity pool. We prefer the term "commodity pool" as it discourages comparison with stock mutual funds. It is also the appropriate legal description for the entities studied.

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each pool operator would contribute to the study only once in the year in question, and so that no individual operator or group of operators would dominate the study results.[2] If both an annual report and disclosure document were not present for at least one pool, the operator was not included in the study.

Data from 67 pool operators in 1981 were obtained. In 1982, when there were more pool operators and better compliance with CFTC filing regulations, a total of 102 pools were obtained for the survey.

For each such pool in either the 1981 or 1982 surveys the following information was examined and tabulated: the initial equity at the beginning of the year (E_i), or the gross proceeds of the offering if the pool began trading during the year; the final equity at the end of the year (E_f), or the proceeds of the final distribution to investors if the pool ceased trading during the year; the number of months that the pool was traded in the year in question (N); all offering costs including sales or syndication costs if money was raised during the year[3]; the total amount of commission expense and exchange fees charged the pool including accrued commissions if available (C), this quantity simply being referred to as "commission expense" henceforth; any management or advisory fee expense paid or accrued to either the pool operator or the trading advisor; any incentive fee expense; any accounting, legal, or other professional fees paid or accrued including organizational expenses; and any other expenses.

Total expenses were also obtained for each pool in each year by adding the various expenses above. In 7 cases in 1981 and 11 in 1982 an important component of the expense information was either not broken out or missing so that total expenses could not be determined. These cases were omitted from the analysis here resulting in 60 surviving data points in the 1981 survey and 91 in the 1982 survey.

Annualized average equity (E), which is necessary for determining both annual commission/equity and total expense/equity ratios, was determined from the formula

$$E = \frac{E_i + E_f}{2} \times \frac{N}{12} \tag{1}$$

Here the ratio $N/12$ adjusts equity for pools trading less than 12 months in the study year to allow a common yardstick for comparisons involving pools that traded for different time periods. Dividing the result of (1) into commission expense produces an annualized commission/equity ratio, while dividing it into total expense produces an annualized total expense/equity ratio.[4]

[2]See Irwin and Brorsen (1985) for a discussion of the degree of concentration among general partners of public pools. The "one pool operator, one data point" approach used here removes concentration caused either by one operator having several pools, or that resulting from dollar weighting of pools of various sizes.

[3]The term "cost" is used in describing the monies laid out through not expensed. They are carried as capital costs of the pool by accounting practice and tax regulation. All other expenditures of money are referred to as expenses in this paper including organizational expenses which are properly amortized over time.

[4]Sales cost is generally included in total expense in the year in which that cost occurs. This was done in an effort to reflect the total monies required by the pool relative to annualized average equity.

Results reported here are generally conservative as expenses are usually underestimated while equity is overestimated. This results from the following: E_i-as noted, in any case where trading is initiated during the year the gross proceeds of the offering are used, i.e., before removal of any offering costs or organizational expenses; E_f-if a pool ceases to trade during a year, its final distribution value is used rather than the equity at the end of the year which could be zero, or some small amount left to pay final expenses; N-often it is not possible to determine when a pool actually begins trading and therefore incurring periodic expense, and the time when the partnership is established must be used as a proxy. Similarly, on dissolution only that date may be available and not the date when trading ceases, and periodic expenses cease; C-accounting practices relative to reporting of commission expense in annual reports in this time period ranged from adequate to distinctly uninformative. Commission amounts were frequently not reported (as when only net trading gains or losses were given), or placed in a footnote, or reported only on positions closed out during the year (thus neglecting commission expense amounts which should have been accrued on positions open at year end), or reported only for positions open at year end (while otherwise neglecting the entire commission expense realized during the year). Extracting accurate commission expense information from annual reports was sometimes not possible and led to deletion of some pools from the study. In many cases, it was necessary to settle for an accurate statement of realized commission expense, with unrealized commission expense amounts on positions open at year end remaining unacounted. (Fortunately, such unrealized commission expense amounts are usually small compared with realized commission expense.)

Also, other expenses such as management, advisory, and incentive fees may be received as a disproportionate "distribution of income" rather than line item expenses, while offering costs may not be disclosed with the result that only net proceeds to the pool appear in an annual report. Still further, organizational expenses are typically amortized over 60 months while commodity pools typically remove these expenses at, or shortly after, the pool "breaks escrow" and begins trading.

As a result of accumulation of these various factors the results reported below should be understood to further underestimate the true expenses of commodity pools relative to the funds provided by their participants.

COMMODITY POOL EXPENSES

Analyzing the data for the various pool operators in the manner discussed above produces average annualized commission/equity ratios of 25.0% for 1981 and 25.2% for 1982. The ratio of total expense/equity is 38.8% in 1981 and 46.5% in 1982. These results are shown in Table I, together with the averages of other expenses.

Using the standard formula for confidence estimates based on the normal distribution we find the 95% confidence intervals for the above means correspond to roughly $\pm 11\%$ and $\pm 7\%$ for the commission/equity ratios for 1981 and 1982, and $\pm 10\%$ and $\pm 9\%$ for the total expense/equity ratios. We say "roughly" as the distribution of commission/equity and total expense/equity ratios may deviate from normal and, indeed, may not even possess a standard

Table I
VARIOUS COSTS AND EXPENSES OF COMMODITY POOLS FOR 1981 AND 1982 AS A PERCENTAGE OF ANNUALIZED AVERAGE EQUITY

Ratio	1981	1982
Offering Cost/Equity	0.5%	2.9%
Commission Expense/Equity	25.0%	25.2%
Advisory and Management Fee Expense/Equity	6.9%	7.8%
Incentive Fee Expense/Equity	0.9%	3.8%
Professional Fee Expense/Equity	2.3%	2.7%
Other Expenses/Equity	3.0%	3.8%
Total Expenses/Equity	38.8%	46.5%

deviation.[5] Under these circumstances the distribution of the resulting means is not normal and the standard formula for confidence intervals is not accurate.[6]

Sensitivity of Results

Because these results may seem high to the reader various tests were made to determine the sensitivity of the results to various changes of assumption. For example: if only audited pools are employed on the theory that such results should be more accurate, the total expense/equity ratio averages fall to 37.9% in 1981 and 44.5% in 1982 (only 53 of the 67 annual reports used in 1981 were audited and 91 of 102 in 1982. The rest were merely compilations of information presented by management, or reviews by accountants of similar information); if all points for which the commission/equity ratio exceeds 100% are excluded on the theory that such pools are being overtraded and simply have not been detected by the CFTC, the average of the total expense/equity ratio falls to 30.9% for 1981 and 37.4% for 1982; if annualized average equity as computed from equation (1) is replaced by initial equity on the theory that most pools lose money so that use of the former inflates expense ratios, then total expense/equity ratios of 33.4% for 1981 and 42.3% for 1982 result; if offering cost including sales and syndication cost is excluded from the expense computation, and $12/N$ scaling is applied only to the obviously periodic expenses (commissions, management fees, advisory fees, and incentive fees) and

[5]Contrary to first impression the commission/equity and total expense/equity ratios are not bounded by 100%. This is possible both because of annualization of results for periods shorter than one year (i.e., expenses may consume all of equity in, say, six months leading to an annualized total expense/equity ratio of 200%) or through the occurrence of trading gains or additions to capital which also allow expenses to exceed annualized average equity. Thus the distribution is not bounded and the standard deviation may not exist, i.e., the distributions may be "long tailed" to the right and could correspond to stable distributions with $\beta = -1$ and $\alpha < 1$. Other stable distributions are found to fit satisfactorily both futures price and performance distributions. See Cornew, Town, and Crowson (1984).

[6]In truth, the actual 95% confidence intervals are wider and are asymmetrically located about a different variable than the mean. A better procedure for comparing the results under the various assumptions discussed in the next section would be to compare their resulting distributions using stable distribution techniques developed elsewhere.

not to accounting, legal, and professional fees or other expenses, then total expense/equity ratios of 36.9% for 1981 and 41.9% for 1982 result. This is a conservative test to guard against the possibility that the scaling method is responsible for the large expense ratios obtained. It is conservative, for instance, because the latter categories of expense include organizational expense which is itself usually amortized uniformly over a 60-month period, i.e., it is already prorated for the number of months of trading. Also, the method assumes no further expenditures would occur in these latter expense categories for the remainder of a complete year. Of course, it also excludes offering cost which, as noted, is not an expense although it is real dollars out-of-pocket to the pool participant. Finally, if public pools are excluded on the theory that they somehow dramatically alter the results of analyzing private pools alone, the result is a total expense/equity ratio of 47.6% for 1982. This result is, of course, not very different from that obtained for all pools combined which reflects the fact that public pools are a minority in the industry.

While the ratios obtained are lower under most of the changes of assumption above, they continue to fall within or about the 95% confidence band in all cases.

Finally, it should be noted that the results given here are *a priori* percentages: if it is known at the outset that a commodity pool will last a year or more the total expense/equity ratios fall to 26.8% for 1981 and 33.4% for 1982. While the values obtained are considerably lower, it should be noted that the investor has no way of knowing at the outset that the particular pool he chooses to enter will trade for at least one complete year. We therefore feel that the results for all pools are the most descriptive of the data and will use data including those cases where trading is limited in duration in the year in question (and annualization by the $N/12$ ratio is necessary) throughout the paper.

Figures 1 and 2 show respectively the distributions of commission/equity ratios and total expense/equity ratios of the 1982 pools under the original assumptions.

Economy of Scale

One of the most striking features of the data is the very definite economy of scale present in the results. That is, the average total expense in participating in a pool is an inverse function of the initial equity in the pool. In 1982, for instance, the average total expense/equity ratio of all pools containing less that $500,000 in initial equity was 51.9%, while that for all pools initially having more than $500,000 and less than $1,000,000 was 31.1%. As indicated in Table II this trend continues almost monotonically downward until pools in the range of $10,000,000 to $50,000,000 are reached (this range includes the largest pools in the surveys) where the average total expense/equity is 20.2%.[7]

[7]One pool having an initial equity of approximately $11,400,000 and a very large expense ratio has been ignored here as it engaged extensively in government securities trading. Registration as a commodity pool resulted from a small number of contracts apparently used for hedging purposes. Ignoring all pools engaged in trading in securities, securities arbitrage, options trading, and currency trading (8 in 1981 and 7 in 1982) has a negligible effect on other expense results.

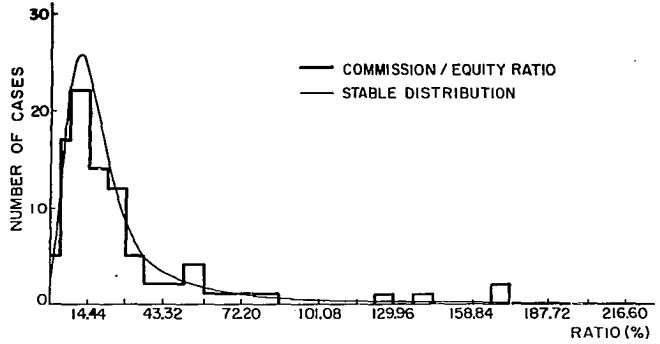

Figure 1
Distribution of 1982 Commission/Equity Ratio Data

The distribution of commission/equity ratio survey data for 1982 is depicted here. Also shown is a stable distribution with $\alpha = 1.06$, $\beta = -.97$ and $c = 7.22$. The stable distribution is located so that its mode corresponds to that of the actual data at 10.8. The horizontal axis is measured in c-units.

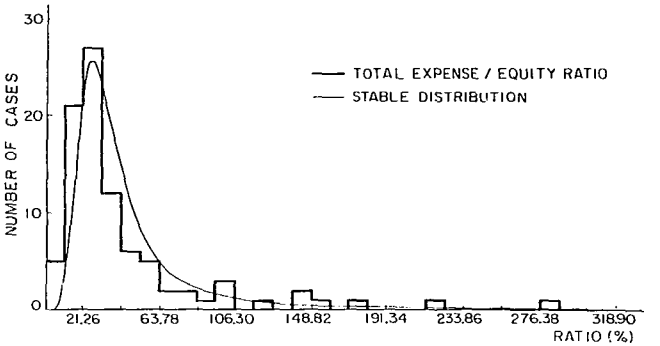

Figure 2
Distribution of 1982 Total Expense/Equity Ratio Data

This figure shows the distribution of total expense/equity ratio survey data for 1982. Also illustrated is a stable distribution with $\alpha = 1.06$, $\beta = -.94$ and $c = 10.63$. The stable distribution is located so that its mode corresponds to that of the actual data at 26.6. Except for the scale (which is measured in c-units) the fitted distribution is almost identical to that fitted to the commission/equity ratio data. Here the fitted distribution has no visible support (i.e., no non-zero values) for negative ratios.

Table II
ECONOMY OF SCALE IN 1981 AND 1982 POOL EXPENSES

Size of Pool (Initial Equity, or Gross Proceeds of Initial Offering)	Total Expense/Equity 1981	1982
$ 0 < $ 500,000	44.4%	51.9%
$ 500,000 < $ 1,000,000	32.1%	31.1%
$ 1,000,000 < $ 5,000,000	21.1%	31.3%
$ 5,000,000 < $10,000,000	22.5%	26.4%
$10,000,000 < $50,000,000	26.4%	20.2%

The smallest pool in the survey possessed an initial equity of approximately $10,000 while the largest was close to $30,000,000; therefore a 3,000 to one difference exists in the size of the pools surveyed which underscores the vast difference in the size of the entities studied. The economy of scale found here is something of a surprise: prior to this study it was often speculated that larger pools were more costly owing to the presence of the higher costs associated with a larger, and perhaps public, offering. These results not only show this supposition to be untrue, but also emphasize that one must be very careful in applying results for large pools to smaller ones, and vice-versa.

Finally, we point out that whether 1981 or 1982 results are used, the total expense/equity ratios of the pools with initial equity greater than $1,000,000, which are the most likely to be public pools, average about 25% of average equity. This corresponds to 20.6% in a Managed Account Report study of public pools (Baratz, 1982), a value not less than 18.8% in a National Association of Futures Trading Advisors study covering several years (Campbell, 1981)[8] and 19.2% in a study by Irwin and Brorsen (1985) over the period 1975 to 1984. This suggests stability in the expense data and corroborates the results given here in a general way even though our data for larger pools is limited. In 1981, the economy of scale in expenses is also present where, again, the same pool has been excluded as in 1982.

SOME EXAMPLES

To show the diversity of expenses among commodity pools we give descriptions of a number of examples from the CFTC files that were reviewed in this study.

[8]This lower limit is cited in the report but no description indicates how it was derived. We re-analyzed composite information that appeared with the data and obtained a result of 20.0%. When we went back to the original data and found a total expense/equity ratio for each pool and then averaged those results, the resulting nondollar weighted result fell to 19.2%. Finally, when we took each pool individually but found average equity by taking one-half the initial and final equity and scaling for the number of months of trading, as was done in this paper, an average total expense/equity ratio of 19.5% was obtained. (The earlier 19.2% value was based on averaging the equity each month the pool traded, and not simply its initial and final equity.) The results by each computation are quite close and generally in agreement with the 18.8% lower bound cited. None of these compatations included sales or other offering costs.

Pool 47, 1981

The partnership equity was $198,252 at the beginning of 1981. Fees were charged against the pool as follows: (i) a fixed fee of 1/2 of 1% per month of net assets, (ii) an incentive fee of 20% of all new profits each quarter, (iii) a commission charge of $65 per round turn on average of which the commodity trading advisor kept all monies beyond the round turn fee negotiated with the brokerage house where trading occurred, (iv) all organization expenses of the pool, and (v) sales costs up to 5% of any investor contributions to the pool. Partnership included a six-month "lock-in" period during which new partners could not redeem their units in the partnership. The partnership terminated five months into the year after losses of $106,844 with an annualized total expense/equity ratio of 109.0%. The total length of time that the partnership traded commodity futures contracts was 11 months.

Pool 29, 1981

From total invested capital of $110,000, trading commissions, management and maintenance fees, office rent, telephone and legal and accounting fees were subtracted together with substantial losses.[9] The pool initiated and terminated trading within a five-month period returning only $1,122 to investors. The annualized total expense/equity ratio was 96.9%.

Pool 33, 1981

This pool had $3,937,800 in partnership capital on January 1, 1981. Partners were charged an organizational fee equal to 18% of the cash originally contributed by the partners; all operating expenses of the partnership; a quarterly management fee computed on a sliding scale and amounting to $106,449 for 1981; an annual incentive fee of 40% of new profits above a cumulative, noncompounded 6% annual return; and other expenses itemized in the Offering Memorandum. Partnership included a lock-in period that could be as great as two years. This pool was not included in the 1981 final survey because it was not possible to determine commodity brokerage commission expense.[10] Large sums of money were raised in spite of the disclosure of very high expenses.

Pool 18, 1982

This pool was initiated April 30, 1982. Trading was concluded on October 7, 1982 with remaining assets less than one-tenth of original capital. Expenses, when annualized, amounted to 177% of average yearly equity and included: brokerage commissions and fees, management salaries and payroll taxes, start-up and miscellaneous other expenses. Organized as a Subchapter S stock

[9]Frequently pools are charged for all expenses of operation which may include computer expenses, communication expenses, consultant fees, etc., as well as the more usual management and advisory fees, commission expense, professional fees and the like. When this occurred we allocated expenses into the more usual categories as we felt appropriate.

[10]All cases like this where commission expense was missing or total expenses otherwise could not be determined were excluded from results reported here.

company, investors also suffered an approximate 20% dilution upon entry to the pool as a result of a much lower per share price paid by the pool organizer who also served as trading manager. The consequence of this for the individual investor is much the same as a 20% front end load in the more usual limited partnership form of organization. This "effective expense" to the investors was not included as an expense in the survey in keeping with our policy of conservative statement of results, i.e., it is not actually an expense.

Pool 26, 1982

This pool began with $432,150 in gross proceeds from an initial offering and incurred $190,689 in expenses in six months of trading in 1982. It charged approximately 5% for snydication costs plus an up-front management fee of 36% per year plus $60 per round turn in commission charges; plus all other expenses of operating the pool which included professional fees, amortization of organization expense, and office expense. Its annualized total expense/equity ratio was 120.6%.

Pool 99, 1982

This pool's expense/equity ratio was 144.4% after a full twelve months of trading activity. The commission expense of $142,619 alone exceeds the initial equity of $141,897 while total expenses exceed the annualized average equity across the year as computed from $(E_i + E_f)/2$. The example illustrates that an arbitrarily large expense ratio may result if, by virtue of trading success, the expenses of the pool including commission expense are at least partly replaced as trading progresses. The pool had lost money by the end of the year however.

The above examples illustrate a general pattern of high expense, short life and losses to the investor in the various small, private pools. Substantial sums in aggregate were raised and in circumstances where there was generally no lack of disclosure regarding the very high potential expense.

POOL EXPENSES AND PROFITABILITY

It is worthwhile to examine the rate of return necessary for pool participants to break even given the expense levels which obtain and assuming no reinvestment of profits. At a total expense/equity ratio of 46.5% which was the survey result for 1982 this may be computed as follows:

$$6.5\%/{}^1\!/_2(100\% + 53.5\%) = 60.6\% \qquad (2)$$

In words, this says that the annual expense of the pools (46.5%) must be recovered by a sum of money equal to the average amount available for trading assuming no trading gains or losses. This in turn is equal to 1/2 of the initial and final amounts in the pools after removal of expenses (in percentages 100% and 53.5% remain respectively). Here we have assumed that expenses are

taken out uniformly across the year. In actuality, some part of the 46.5% average expense is front-end loaded with the result that the denominator in (2) will decrease slightly and yield a somewhat higher breakeven ratio.

For smaller pools this *a priori* breakeven ratio is even higher. Using the 51.9% total expense/equity ratio that prevails in 1982 for pools under $500,000 in initial assets yields

$$51.9\%/{}^{1}/_{2}(100\% + 48.1\%) = 70.1\% \qquad (3)$$

Thus, for the very smallest pools in the survey, each remaining dollar after expenses has to show a 70.1% return by this criteria to achieve breakeven for pool participants. Table III shows these a *a priori* breakeven percentages for each size category in our survey. Notice the more than three to one difference between the breakeven rates of return for the smallest and largest pool size groups in 1982.[11] The difference is almost two to one in 1981.

To contrast with earlier examples of pools cited which all produced losses we present three examples of pools which achieved profits in spite of high breakeven points.

Pool 82, 1982

This pool traded for the entirety of 1982 and had a ratio of total expense/equity of 55.7% which exceeded both the overall ratio for all pools for that year (46.5%) and that for its size category ($500,000-1,000,000) which is 31.1%. Starting with $768,151 in equity at the beginning of the year it made

Table III
***A PRIORI* BREAKEVEN POINTS FOR VARIOUS SIZE POOLS**

Size of Pool (Initial Equity, or Gross Proceeds of Initial Offering)	Breakeven Return 1981	1982
$ 0 < $ 500,000	57.1%	70.1%
$ 500,000 < $ 1,000,000	38.2%	36.8%
$ 1,000,000 < $ 5,000,000	23.6%	37.1%
$ 5,000,000 < $10,000,000	25.4%	30.4%
$10,000,000 < $50,000,000	30.4%	22.5%
All	48.1%	60.6%

[11]In open-ended pools the time of entry also effects the ability of the pool participant to achieve a breakeven return. If a pool begins at 100, with an expense ratio of 40, an initial participant needs a 40 point return to achieve breakeven. If the asset value of the pool falls to 50, and a second participant enters, he need only achieve a return of 20 points. While the expense percentage is the same, the absolute amount of movement is only one-half that for the initial participant. In open-ended pools subject to large fluctuation in asset value the rule for success is: buy at a low point (and sell at a high point). Most pools are effectively closed ended however, although asset values vary widely.

$825, 981 after all expenses from gross gains of $1,543,124 including $109,334 of interest. While this pool attracted $554,212 in additional investments during the year, it had redemptions of $341,440 resulting in the conclusion that pool participants who were in the pool the full twelve months of 1982 nearly doubled their money (per unit value increased from $1,319.20 to $2,284.50). Total expenses in this pool relative to *initial* equity at the beginning of the year were almost 100%.

Pool 19, 1982

This pool had an annualized total expense/equity ratio of 156.1% yet still realized a profit of $113,338 after expenses with $15,554 of interest income. Expenses totaled $229,137 (including offering costs of $10,527) against $275,000 of gross proceeds from an initial offering. Thus profits approximated 40% of the initial capital in spite of the large expense ratio. As this pool traded approximately six months in realizing these gains, the annualized rate of appreciation approaches 80% after all expenses.

Pool 32, 1982

This pool made $7,325,084 in net income with $15,385,816 in starting capital (or almost 50%) in 1981. It was fairly typical of the largest pools in the survey with regard to its expenses (a total expense/equity ratio of 17.2%) which is slightly less than the average for its size category (20.2%).

Function of Money in a Commodity Pool

The function of money contributed to a commodity pool is to provide initial margin for positions established in the pool; to provide reserves to allow those positions to be maintained in the face of economic adversity; and to pay the expenses of operating the pool. Because of the considerable leverage in the commodities markets, a small amount of margin controls a large amount in face value of positions with a consequent large ability to make or lose money far in excess of the money contributed or remaining after expenses. This situation is very different from that of stock mutual funds where nearly the entire face amount (usually) is put up to own securities. One does not "own" commodity futures positions and comparisons with costs and potential profitability relative to money put up in the two cases are fundamentally invalid.

This can be illustrated through an example involving the United States Treasury bill futures market on the Chicago Mercantile Exchange. There (at a point during the time period of this study) $1,500 controlled $1,000,000 in Treasury bills for future delivery. Thus a 60 point move (at $25 per point) is necessary to overcome the initial margin amount; i.e., less than a 1% move in the price of Treasury bill futures overcomes the entire initial margin which must be posted to establish a position. To view this in the context of a pool we imagine a pool with $500,000 in initial assets. Assuming a total expense/equity ratio of 46.5% (the overall average of all pools) $232,500 in expenses will

be removed during the year.[12] If such expenses are disbursed uniformly an average of $383,750 will remain for trading assuming no gains, losses, additions, or withdrawals. If 20% of this sum is used for initial margin (Cornew, 1986), a total of 51 complete Treasury bill futures contracts worth $51,000,000 can be controlled. Thus, the amount being controlled is far in excess of either the expenses ($232,500) or the average amount remaining after expenses ($383,750) and a small change in the futures contract price (less than 1/2%) can enable the pool participant to recover his total expenses and possibly profit. Whether or not this happens depends on the skill or luck of the trading advisor.

PROFITABILITY OF COMMODITY POOLS

Having analyzed the expenses of commodity pools and having derived their theoretical breakeven points, actual profitability results will now be given. Because reporting practices vary among accountants it is first necessary to define a standard format for describing the results of trading for all advisors. A standardized income statement is shown in Table IV.

Beginning with *gross commodity income* (both realized and unrealized), brokerage commission expenses are first removed to generate *net commodity income.* As noted earlier, accrued commodity trading commission expense

Table IV
STANDARD FORM OF INCOME STATEMENT

Gross Commodity Income (Realized and Change of Unrealized Gains (Losses))	$100,000
Less Commissions and Exchange Fees (Realized and Accrued)	$25,000
Net Commodity Income	$75,000
Other Trading Income (Securities, Securities Arbitrage, Options, Currency Trading, etc., all net of commissions)	—
Other Income (Interest and Dividends, Misc. Income)	$10,000
Total Income	$85,000
Less Remaining Expenses (Management and Advisory Fees, Incentive Fees, Professional Fees, Other Expenses)	$20,000
Net Income	$65,000

[12]Actually, only $188,641 will be removed as the equity will decline corresponding to the removal of expenses. The average equity under these circumstances is then $405,680 which, at a 20% initial margin/equity ratio, would control 54 contracts with a face value of $54,000,000. These corrections only enhance the prospect that a small change in the futures price can enable the pool participant to recover his total expenses and possibly profit.

amounts are included in commission expense wherever they can be determined.

To net commodity income is added both *other trading income* from other sources such as trading in securities, securities arbitrage, options trading, and currency trading, as well as *other income* from interest and dividends and miscellaneous other sources. *Total income* is then the sum of all trading gains of the pool (from commodities trading as well as other types of trading) and this other income component.

Net income is then determined from total income by subtracting all remaining expense items of the pool as discussed in earlier sections (but not including offering cost since it is not an expense and is not amortized). Also, it should be noted that income from trading physical commodities (as distinct from commodity futures trading income) may be reported either in commodity trading income or in other trading income. When present, accountants followed no standard practice, and disaggregating results was usually not possible.

Percentages of Profitable Pools

The percentage of pools which are profitable for each type of income are given for both 1981 and 1982 in Table V. Also, results for *net trading income* which is defined as net income less other income (which is predominately interest) are given. This is done so that it is possible to determine at a glance the percentage of pools which are profitable beyond merely the interest monies gathered from the pool assets. Also, notice that pools which traded securities, securities arbitrage, options, and other forms of noncommodity trading such as currency trading are included in the category Other Income. In practice, however, neither total nor net income percentages are much affected as the number of pools engaged in such trading is small.

A little less than half the pools are profitable before commission expense or other expenses are removed as indicated by gross commodity income. After excluding commission expense but including other trading income and other income (primarily interest) the total income percentages are almost the same as those for gross commodity income. A small decline occurs when remaining expenses are removed resulting in 33.3% and 37.4% of pools showing a positive net income in 1981 and 1982 respectively. A further decline occurs if other income is taken back out of these percentages to show the effect of interest income on net income. This is shown in the net trading income values.

Average Returns

Table V also shows the annualized *average* returns of the pools for 1981 and 1982 for the same income categories as above. As would be expected where most pools lose money, the average rates of return are usually negative. Net income was −38.5% in 1981 and improved slightly to −21.0% in 1982. When commission expenses and other expenses are re-inserted, gross commodity income was still negative at −9.0% for 1981 while the only positive income at 13.2% resulted there in 1982. Thus, even if commodity trading were

Table V

PERCENTAGES OF PROFITABLE POOLS AND AVERAGE RETURNS BY EACH OF SEVERAL CRITERIA

	1981			1982		
	% Profit-able	Ratio Profit-able	Average Return	% Profit-able	Ratio Profit-able	Average Return
Gross Commodity Income	45.0	27/60	(9.0%)	46.2	42/91	13.2%
Net Commodity Income	36.6	22/60	(33.7%)	37.4	34/91	(12.5%)
Total Income	41.6	25/60	(26.4%)	45.1	41/91	(0.3%)
Net Income	33.3	20/60	(38.5%)	37.4	34/91	(21.0%)
Net Trading Income (Net Income less Other Income)	26.6	16/60	(47.4%)	34.1	31/91	(29.4%)

without expense in all respects, results in the earlier year would not achieve the breakeven point on average although it would in 1982.

Notice also that results were somewhat better overall in 1982 than in 1981 in spite of a greater average total expense/equity ratio in the later year (46.5% versus 38.8%).[13] Year-to-year variation in profitability is to be expected and results for each of several years would be necessary to get an overall picture of the profitability of trading commodity pools. Such results are available for public pools in Irwin and Brorsen (1985). Managed Account Reports has also chronicled results from various pools but no truly comprehensive long-term profitability results as yet exist for private pools or for the industry as a whole.

Average Returns for Profitable Funds: The Case for Selection

If instead of averaging across all pools in a given year the averaging is taken across only those exhibiting a positive net income, a rather different and more favorable picture emerges. The average net income or expected return for 1981 would be 30.5% while that for 1982 would be 47.4%. This result is very different from, say, a stock mutual fund where the variability among funds is far less and most tend to move together.

While it is not clear whether anyone can predict which commodity pools will be profitable, it is clear that such ability is paramount if it can be obtained. (See Elton, Gruber and Rentzler (1987) for an argument that most profitable *public* pools are not predictable in advance.) The great difference in results between those pools which are profitable and those which are not certainly justifies the enormous effort which is currently directed toward advisor selection (Jobman, 1981; Abbott, 1981; Powers, 1982; Babcock, 1985; and Szala, 1985).

It can also be said that high expense is not a discriminant against good performance. If we look only at those pools which are profitable we find their total expense/equity ratios for 1981 and 1982 to be 34.2% and 48.2% respectfully. These numbers are inconsequentially different from those of all pools in the years in question.

Figure 3 shows the distribution of net income or percentage return for pools operating in 1982.

CONCLUSIONS

Need for Standardization of Annual Reports

After analysis of data needed for this study the need for standardization in information submitted to the CFTC (or NFA) became clear. This is no mere plea for conformity to ease the efforts of the scholar. It is essential if full statistical use is to be made of these reports and if the regulatory function is to be rooted in knowledge of the industry. While regulatory requirements calling for standardized information relating to commission expense and other expenses

[13]But whether this improvement is statistically significant requires an analysis using appropriate (stable distribution) statistics.

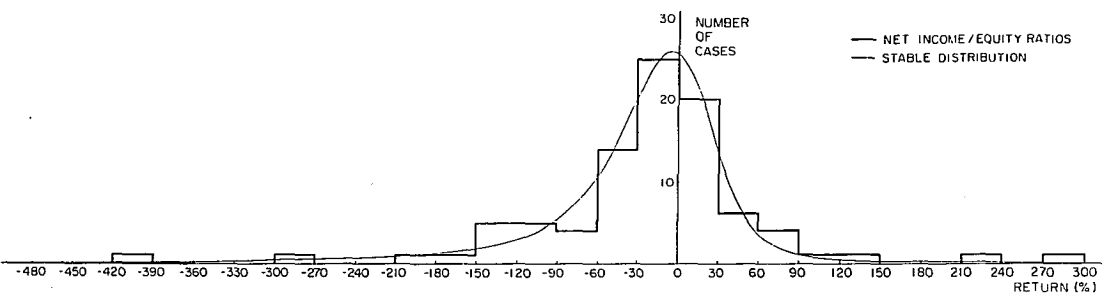

Figure 3

Distribution of 1982 Net Income/Equity Ratio Data

The distribution of survey data of net income as a percentage of equity for various pool operators in 1982 is shown here. Also depicted is a stable distribution with $\alpha = 1.32$, $\beta = .58$, $c = 30.3$ and $\delta = -41.5$.

were in place by this time period, the evidence indicates that annual reports submitted as late as 1982 still could not be picked up and read informatively in many cases. Deficiencies range from the relatively innocuous to the outright deceptive.

Model of the Commodity Pool Industry

A more troubling issue is that of the inadequacy of the stock mutual fund model for the commodity pool industry. While the largest and best-known pools (which are typically public pools) may resemble mutual funds in the sense that expenses are "moderate" (here meaning 20% or so of pool assets annually) the majority of the industry is clearly better modelled in another way.[14] What is at stake is whether commodity pools are to be modelled as investments or speculations. Not surprisingly, the data (with its 46.5% average total expense/equity ratio in 1982, and with its wide variability in net income from pool-to-pool and year-to-year) suggests that the strict speculative model is often more appropriate although, in truth, the industry presents a complete spectrum of possibilities.

Unfortunately, for regulatory purposes, the CFTC and various state security commissioners have often proceeded by analogy to securities regulation, where the investment model applies. Thus we have enforcement actions and decisions beginning to come out of the reparations process which adjudge certain levels of expense, or expense in relation to market commitment, to be *per se* fraudulent.[15] Also, the North American Securities Administrators Association, an organization of the securities administrators of the various states in the United States and the provinces in Canada, continues to consider an entire regulatory structure including fee limitations apparently based on such an analogy (Campbell, 1981; NASAA Reports, 1988).

However sympathetic we may be to their plight, decisions by administrative law judges, securities administrators, and others which are not rooted in any substantial understanding of the operations of the industry are obviously prone to error. More than a mere recitation of the fees charged, or those fees in relation to monies raised, or initial margin, or whatever, seems to be necessary before it can be concluded that fees are excessive, particularly in view of the tremendous leverage that is present in these markets and the potential to profit in spite of high expenses.

[14]This level of expense is of course 15–100 times the average mutual fund expense based on money under management in a commodity pool versus that in a mutual fund; i.e., even moderate expense pools actually differ greatly from stock mutual funds. When leverage is taken into account and the total value of what can be controlled is used in the comparison, results that are more comparable (but not completely so) are obtained.

[15]See, for example, Hearne v. Commodity Fluctuation Systems, Inc. which involves a managed account and In the Matter of Commodities International Corporation, et al. (CFTC Docket No. 83-43) where the concept has been applied to commodity pools by the Division of Enforcement. The CFTC has also proposed regulations in the past (February 2, 1984) to limit the income pool operators may receive from pool assets to guard against a perceived offense in which so small an amount of pool assets is committed to trading that a "virtually unattainable" rate of return must be achieved by that trading in order to overcome pool expenses.

Need for High Expenses

Also, the reasons for such expenses are rarely acknowledged. They include the fact that most commodity pools contain only a small number of dollars, and that the expense to manage those funds may be high in view of frequent trading and the computer technology often employed. Still further, such expenses as may be removed from a pool typically have to be shared among 2 or 3 entities: a futures commission merchant (broker), a commodity trading advisor and perhaps a distinctly-separate commodity pool operator.

By way of example, few businesses today can operate with several employees and a computer without at least some number of hundreds of thousands of dollars a year in income. Yet typically a successful trading advisor or pool operator will have only low millions under management in a relatively small number of different pools. The most elementary comparison of such numbers suggests advisory and management expenses must run 10.0% to 20.0% of pool equity per year, and perhaps substantially more. If brokerage expenses for fairly frequent trading are then added in, the kind of totals we reported earlier result. To some extent this is a chicken-and-egg problem as substantial economics can be realized could large sums under management be obtained by the typical pool operator. Even then, however, various factors such as government-imposed position limits and limits on the size of positions that can practically be traded in current futures markets would serve to moderate pool size and hence further savings in unit expenses. Current attempts to reduce pool expenses will only be successful to the extent that pool equity is increased.

Disclaimer, Utility of Pools

A disclaimer is necessary with regard to the performance results reported here. While only 26.6% of pools in 1981 and 34.1% in 1982 profited beyond the interest earned on pool assets, experience suggests that these results would vary greatly depending on the time period studied. Irwin and Brorsen (1985) show, for instance, that the average returns of public commodity pools vary from −32.4% to 44.0% over the time period 1975 to 1984 when all pools are weighted equally, as was done here. The variability of results for the entire industry is no doubt greater.[16] Also, their results show 1981 and 1982 to have been a period of low trading returns relative to earlier years which generally agrees with the feeling in the industry concerning the difficulty in trading at that time. Still further, our technique of weighting all pools equally has brought percentage returns down relative to, say, weighting returns by the amount of equity in each pool. This latter type of weighting would have brought expenses down and would have resulted in greater profitability as larger pools generally had lower expenses and higher returns (as we showed). To do this, however, would have made this study tantamount to a study of the

[16]The circumstances of when one enters the market, what contracts are traded and how, and the variability of performance among advisors are the most important determinants of potential profitability, not the expenses charged, whether the pool receives interest income or how much, its initial size, or similar factors which may at most bias the results one way or another.

larger and perhaps public pools which dominate the industry in terms of the amount of money under management. Such was not our goal.

Finally, even if results on average are negative we have the issue of whether such pools still might not have utility to their investors. This could occur if, as discussed by Lintner (1983), Orr (1984), and others, such pool returns negatively correlate with other investments such as stocks, Treasury bills or bonds, or combinations thereof.[17] However, in our experience the answer to why most people participate in pools lies either in a lack of knowledge concerning expected returns in this industry or, if they possess such awareness, in a belief that they can select an advisor or advisors who can help them beat the odds. Success at this can be very profitable as our returns of 30.5% for 1981 and 47.4% for 1982 after all costs evidence, if one can only somehow manage to pick an advisor who can overcome the seemingly elementary hurdle of making some amount of profit.

Regulatory Thrust

We feel the proper regulatory thrust in the managed commodity business over the next few years should be to put more *relevant* information in the hands of pool participants. To accomplish this the CFTC should actively encourage the development of more knowledge about the industry by sponsoring studies, and taking other steps to develop a more detailed understanding of the industry.

Two cases for specific attention follow. First, is there sufficient correlation between past trading results and future performance to justify the considerable attention now being directed to track records, and their mandatory inclusion in disclosure documents, particularly where they are not relevant, or are only marginally relevant, to the program being offered? In our experience this adds greatly to the complexity of pool documents and hence to the expense of offering new programs which expense must ultimately be borne by pool participants. Such track records are extremely misleading to participants in managed money programs who invariably believe the future will be much like the past in spite of the standard disclaimer indicating that it may not be. Such statements invariably fail to give any quantitative sense of just how much variability may occur, *or is to be expected,* and thereby contribute to investor losses. We think the burden is on the CFTC to show that such correlation exists and, where it does not, to provide a more flexible and effective way (and a less costly one) to communicate the likely range of outcomes of participating in a pool. Pool participants usually do not understand the amount of performance necessary to break even and an explicit statement of the breakeven percentage (which increases disproportionately with the estimated costs and expenses of the pool, and the degree to which those costs and expenses are taken up-front) may be one yardstick they should be given.

Further, there is a need to make risk disclosure more quantitative. The cur-

[17]The reader is cautioned that the mean-variance approach upon which Lintner's work rests results in the selection of less than optimal investment portfolios if the distributions of returns are not normal. For stable distributions of return data the problem is properly formulated in terms of the location and scale of such distributions rather than the mean and standard deviation. See Arad (1975) for a development of this theory.

rent qualitative risk disclosure statement falls short of the mark in view of the wide variability in performance in the industry (or perhaps even among the pools or accounts of the same advisor), a variability that is far greater than an investor familiar with only traditional investments might guess. A statement that the participant may lose all of his money (or more in the case of managed accounts, or some pools) is not very helpful without some sense of how likely this is to happen and that in turn depends very much on the trading manager. A statement of the number or percentage of previous investors that have lost money, and the amounts or percentages that have been lost, would usually go further to inform the participant of the risks in a program. Alternatively, an illustration of what the advisor's worst period of previous performance would mean in the context of the current investment might prove helpful.

We might hope that a factually-driven examination of current regulatory precepts, including some that now appear sacred, might improve commodity money management by producing a more informed customer, and by helping to remove pool operators and trading advisors who might be inept or dishonest from the field. In any case, a maturing industry deserves to be regulated on its own characteristics and these steps would at least make participation more informed and fair.

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