

Manager-Investor Conflicts in Mutual Funds

Paul G. Mahoney

Half of all of U.S. households own shares in one or more mutual funds, either directly or through personal or employer-sponsored retirement accounts. The growth in mutual fund investment has been dramatic. At the end of World War II, there were 73 mutual funds registered with the Securities and Exchange Commission holding \$1.2 billion in assets (Investment Company Institute, 2003). By the end of 2002, over 8,000 mutual funds held more than \$6 trillion in assets. Mutual funds own approximately 21 percent of the common equity and 11 percent of the debt securities of U.S. corporations (Federal Reserve, 2003). Table 1 shows the growth in the number and assets of mutual funds from 1992–2002.

The existing literature on mutual funds focuses primarily on whether fund managers' stock selection efforts generate excess returns that justify the associated fees and transaction costs (Daniel, Grinblatt, Titman and Wermers, 1997; Malkiel, 1995). In these studies, a mutual fund can be considered a black box that uses some strategy to convert investor cash into returns. But what happens inside the box has become front-page news. In July 2003, New York's Attorney General, Eliot Spitzer, notified a hedge fund, Canary Capital Partners, LLC, that it was the target of an investigation into mutual fund trading practices. In early September, Spitzer alleged various trading improprieties in a civil suit against Canary. Suits and criminal prosecutions against other mutual fund traders, brokers, mutual fund management companies and their respective executives followed at a breakneck pace over the following months.

Although the details of the alleged wrongdoings vary, the issues are all rooted

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Table 1

Mutual Fund Size and Household Ownership, 1992–2002

<i>Year</i>	<i>Number of mutual funds</i>	<i>Mutual fund net assets (\$ billions)</i>	<i>Long-term mutual fund net assets (\$ billions)</i>	<i>U.S. households owning mutual funds (%)</i>	<i>Mutual fund investments as % of household financial assets</i>
2002	8,256	6,391	4,119	49.6	17.8
2000	8,155	6,964	5,119	49.0	18.2
1998	7,314	5,525	4,173	44.0	16.2
1996	6,248	3,525	2,624	37.2	13.1
1994	5,325	2,155	1,544	30.7	10.5
1992	3,824	1,642	1,096	27.0	8.3

Source: Investment Company Institute (2003).

Notes: Long-term mutual funds exclude money market mutual funds. The 1992 figure under “U.S. households owning mutual funds” is not comparable to the rest of the column because it excludes ownership through employer-sponsored retirement plans.

in basic conflicts of interest between mutual fund investors and the companies and individuals that organize, sell and provide services to mutual funds.¹ This article describes the structure and regulation of mutual funds and the resulting incentives facing those who make decisions for the funds. After providing some basic institutional details, it focuses on the cash flows from mutual fund investors to fund managers, brokers and other third parties and the associated conflicts of interest. The article concludes with a summary of recent legal proceedings against mutual fund managers and brokers based on improper trading practices and regulatory proposals to curb those practices.

What Do Mutual Funds Do?

A mutual fund is “a low-cost way for the investor-in-the-street to own a stake in a portfolio of securities” (“Special Report: Mutual Funds,” 2003). Some mutual funds, known as index funds, seek to replicate the average return on a wide and representative measure of the market, like the Standard and Poor’s 500 or the Wilshire 5000. Most mutual funds, however, are actively managed, meaning that the fund managers chose securities that they believe are currently undervalued.

Mutual funds provide services in addition to diversification. They offer liquidity by standing ready to redeem their shares at net asset value, or the ratable value

¹ Discussions of specific individuals or entities in this article are taken from the allegations in civil and criminal complaints or administrative proceedings instituted by state or federal officials or investors. In most instances, the legal proceedings are ongoing or the defendants have settled without admitting the allegations. The author, the editors of the *Journal of Economic Perspectives* and the American Economic Association express no independent opinion on the truth of any such allegations.

of the fund's investment portfolio less any debts. Investment vehicles that continuously redeem shares in this way are called "open-end" funds, and this paper uses the term "mutual fund" to refer exclusively to publicly offered open-end funds.² Mutual funds also offer services such as check writing, record-keeping and telephone or Internet exchanges among funds in the same family.

Most mutual funds are created and managed by a mutual fund management company that is registered as an investment adviser with the Securities and Exchange Commission. The management company may be a subsidiary of a bank, a broker-dealer, an insurance company or a financial services firm that specializes in mutual fund management, such as Fidelity or Vanguard. The management company often manages a "complex" of funds with various investment objectives. As of January 2004, for example, Vanguard offered 98 different mutual funds to retail investors. Fund complexes that offer more choices and innovate by introducing new types of funds tend to gain market share. While the number of fund complexes has tripled over the past 20 years, the market share of the top five mutual fund complexes has remained steady at approximately one-third of total mutual fund assets (Khorana and Servaes, 2000).

The assets in any given mutual fund must be insulated from those of other mutual funds in the same complex and from the operations and associated risks of the management company and other firms that provide services to the fund. The simplest approach is to put each mutual fund's assets into a separate corporation, trust or other legal entity that engages in no activities other than acquiring, holding and selling investment assets and issuing and redeeming its own shares or other ownership interests.

The management company separately incorporates each mutual fund and provides a nominal start-up capital.³ Before offering shares in the fund to the public, the management company selects an initial board of directors. Companies that manage a large fund complex frequently elect the same individuals to the boards of each of the funds. The board approves an advisory agreement between the fund and its investment advisor, which is usually the management company or an affiliate. After the mutual fund sells shares to the public, the management company retains only its nominal shareholding and formal control passes to the public investors, who periodically thereafter elect directors and approve significant policy changes.

Mutual funds must comply with securities laws that govern other publicly traded companies, which generally prohibit fraud and require various kinds of information disclosure. Mutual funds and other collective investment vehicles are

² So-called closed-end funds do not redeem shares continuously, but list their shares on an exchange to provide liquidity. Another investment vehicle, known as a unit trust, purchases a portfolio of assets but does not subsequently trade those assets. Mutual funds are substantially more popular in the United States than either closed-end funds or unit trusts, holding roughly 20 times the assets of the latter two categories combined.

³ Mutual funds are organized either as corporations or business trusts. There are minor differences in governance between the two, but they are not substantively important.

also subject to a separate regulatory statute, the Investment Company Act of 1940, which requires mutual funds to register with the Securities and Exchange Commission and to comply with various disclosure, conflict of interest, capital structure and corporate governance rules. A fund's investment adviser is subject to registration and regulation under the Investment Advisers Act of 1940. Finally, the National Association of Securities Dealers prohibits dealers from selling mutual fund shares unless both the dealer and the fund itself meet certain requirements.

The Direct Costs of Mutual Funds

This section describes investor fees and annual costs of mutual funds. Some of the costs are paid directly by investors, others from the mutual fund's assets and still others by the management company. All costs represent income to the manager or to third parties the manager selects to provide services to the fund. The manager's income increases with the assets in the fund. The investor's objective is to maximize realized returns, not the size of the fund. This difference matters, particularly with regard to marketing expenses, which increase fund size but may reduce realized returns. After discussing the primary costs, I discuss whether competition among fund managers cures the manager-investor conflict. The next section discusses the potential for managers to extract hidden benefits from the mutual fund.

Marketing and Sales Costs

Mutual funds rely on one of two methods to sell shares to the public. Some sell exclusively through broker-dealers. Proprietary funds, such as the Merrill Lynch fund complex, are affiliated with a full-service broker-dealer that sells the fund's shares. Other "independent" fund complexes, such as Putnam, focus on mutual fund management and sell through unaffiliated brokers. Mutual funds sold through brokers often charge a sales load, or commission, that may be paid when the investor purchases shares (a "front-end" load) or sells the shares (a "back-end" load). Although the fund determines the amount of the load, it is retained by the selling broker and represents compensation for the broker's investment advice and ancillary services to the investor. Under the Investment Company Act, the selling broker may not increase or decrease the sales load by separate agreement with the customer.

Instead of or in addition to a sales load, a mutual fund may deduct an annual fee from the fund's assets that can be used to compensate selling brokers and for other marketing expenses. Section 12(b) of the Investment Company Act and the SEC's rule 12b-1 permit such payments only if they are approved by the fund's board and a majority of the board is independent of the management company. Fees deducted from the fund's assets to meet marketing expenses are therefore known as "12b-1 fees." Rules of the National Association of Securities Dealers limit

12b-1 fees to 1 percent of the mutual fund's assets annually. The majority of such fees are used to compensate selling brokers.⁴

Some mutual funds marketed through brokers offer multiple share classes representing ownership interests in the same portfolio, but using different fee structures. Each share class uses a different mix of front-end loads, back-end loads and 12b-1 fees to compensate selling brokers.

Other mutual funds are directly marketed to investors without the use of brokers. Investors purchase shares from the fund and pay no sales load. Alternatively, the investor may purchase through a "fund supermarket," such as Charles Schwab's OneSource. A fund supermarket is organized by a broker but does not solicit investors to purchase any particular fund. Instead, it offers (frequently at no fee to the investor) a menu of "participating" mutual funds. The advantage to the investor is that all of the investments purchased through the fund supermarket are held in one consolidated account, even though they may come from various mutual fund complexes.

A directly marketed fund may charge a 12b-1 fee and use it to pay for advertising and for "shelf space" at mutual fund supermarkets. For a fund to advertise itself as a "no-load" fund, however, the NASD requires that it charge no sales load and have a 12b-1 fee of no more than 25 basis points (that is, no more than 0.25 percent of net assets). Some directly marketed mutual funds, known as "pure" no-load funds, do not charge a sales load or deduct a 12b-1 fee from the fund's assets. Instead, the fund manager pays marketing expenses from its own resources.

The 12b-1 fees are controversial. The mutual fund industry argues that these fees are a means by which investors who purchase through brokers can spread out the broker's compensation over time rather than bear it all at once in the form of a sales load. Critics of 12b-1 fees note that they, unlike sales loads, are not paid directly by the investor in connection with a transaction, but deducted annually from the fund's assets. Thus, in effect, current shareholders bear the cost of attracting new shareholders. Because the manager has a greater interest in maximizing the size of the fund than do investors, the manager may spend more of the shareholders' money on marketing than the shareholders would prefer.

Any fund, whether indirectly or directly marketed and whether load or no-load, may charge the investor a small annual "account fee" covering the costs of account statements, postage and so on. In addition, a fund may charge a percentage fee for redemptions that follow within a short period (often 90 days) of the purchase in order to discourage frequent trading in the fund's shares. The fee is paid to the fund rather than the fund manager.

Table 2 provides the number and size distribution of mutual funds and share classes in September 2003, using the most recent available data from the Center for Research in Securities Prices mutual fund database maintained at the University of Chicago's business school. The 6,662 mutual funds for which the database includes

⁴ According to the website of the Investment Company Institute, 63 percent of 12b-1 fees are paid to brokers. See (http://www.ici.org/funds/abt/ref_12b1_fees.html).

Table 2
Mutual Funds and Share Classes, September 2003

	<i>Mutual funds</i>	<i>Share classes</i>
N (asset size data)	6,662	16,018
Net assets (\$ millions):		
Mean	941	391
Median	168	40
Maximum	82,215	66,719
75 th percentile	565	181
25 th percentile	49	7
Standard deviation	3,453	1,941
Expense and fee structures:		
Number charging a sales load		8,983
Number charging a 12b-1 fee		10,547
Number of "pure" no-load		5,148
Average expense ratio		1.37%

Notes: The table provides descriptive statistics on all mutual funds covered by the Center for Research in Securities Prices (CRSP) mutual fund database as of September 2003. A mutual fund may be divided into multiple share classes that represent ownership in the same portfolio of assets but that have different fee structures. CRSP treats each share class as a separate fund. For purposes of the table, therefore, each share class that has the same name except for a designator (such as "A," "B," "select," etc.) is taken to be part of the same mutual fund. See (<http://gsbwww.uchicago.edu/computing/research/unix/crspmutualfund.html>).

size data issued 16,018 different classes of shares in aggregate. Of those classes, 56 percent had a sales load, 66 percent had a 12b-1 fee and 32 percent had neither. Sales loads ranged from 0.1 percent to 10.5 percent of the amount invested, with a mean of 3.6 percent and a median of 4.5 percent. Although a majority of share classes assess a sales load and/or 12b-1 fee, the pure no-load classes have more assets in aggregate, accounting for 56 percent of the \$6.3 trillion of total mutual fund net assets.

The Investment Company Institute (2004), the mutual fund industry's trade association, estimates the average sales loads paid by investors. Applying those estimates to the Investment Company Institute's (2003) annual sales figures suggests that investors paid approximately \$2.5 billion in total loads in 2002. A more crude but commonly used procedure is to multiply each mutual fund's net assets by one-seventh of its total load, in effect assuming that investors hold mutual fund shares for seven years on average (Sirri and Tufano, 1998). That procedure generates an estimate of \$2.8 billion in loads paid during 2003.⁵

⁵ In calculating the dollar amounts of annual expenses, it is common to apply the relevant percentage fee to the average of net assets at the beginning and end of the year. Because the CRSP data do not yet

Estimating 12b-1 fees is simpler, as it is an annual expense and contained in the CRSP database. Investors paid approximately \$9.5 billion in 12b-1 fees in 2003 in addition to sales loads. If my estimate of the latter is accurate, then investors paid approximately \$12.3 billion in 2003 for marketing, distribution and account services provided by brokers.

Management and Administrative Expenses

A mutual fund's management company receives a management fee, paid from the fund's assets and calculated as a percentage of the net assets in the portfolio, as compensation for investment advice and administrative services provided to the fund. The fee is typically based only on assets under management, partly because the Investment Advisers Act and the SEC's rules limit a fund manager's ability to charge a performance-based fee (Das and Sundaram, 1998; Golec, 2003). Mutual funds also pay third parties for legal, accounting and administrative services.

The Securities and Exchange Commission requires that each mutual fund report an annual "expense ratio" consisting of the management fee, the 12b-1 fee (if any), all other asset-based fees and any other "annual" costs paid from the mutual fund's assets, including legal, accounting and other recurring expenses. The expense ratio is expressed as a percentage of net assets.

During 2003, the mutual funds included in the Center for Research in Securities Prices database incurred approximate annual expenses of \$47.6 billion, or 0.76 percent of total net assets. The difference between that percentage and the average expense ratio of 1.37 percent shown in Table 2 reflects the fact that low-cost funds are larger on average than high-cost funds. Deducting the \$9.5 billion in 12b-1 fees, operating expenses (management fees and legal, accounting and other administrative expenses) are approximately \$38.1 billion.

Trading Costs

A mutual fund incurs trading costs, including brokerage commissions and bid-ask spreads, on portfolio transactions. These costs are not part of the expense ratio disclosed in the prospectus. Instead, the mutual fund reports total brokerage commissions to the Securities and Exchange Commission in a "Statement of Additional Information." The SEC (2000) explains this seeming anomaly by noting that there is no universally accepted means of measuring spread costs. Commissions can be measured easily, but if there is an inverse relationship between commissions and spread costs (perhaps because high-quality brokers charge higher commissions but obtain better trade execution), the disclosure of commissions alone might be misleading.

Using information for a sample of equity mutual funds, Livingston and O'Neal (1996) estimate average annual brokerage commissions at 28 basis points for the

include year-end figures for 2003, I used net assets at September 30, 2003 in place of that average for all of the 2003 expense calculations.

period 1989 to 1993. Chalmers, Edelen and Kadlec (1999) find that average annual brokerage commissions and spread costs for a sample of equity mutual funds were 31 and 47 basis points, respectively, over the period 1984–1991. They define “equity” mutual funds as those invested 50 percent or more in equities, and I use the same definition for purposes of the calculations described below.

Chalmers, Edelen and Kadlec (1999) find that both brokerage and spread costs are lower for mutual funds in the top size quartile (20 and 28 basis points, respectively). In their sample, the top quartile begins at \$468 million in assets. As a rough way of taking account of mutual fund growth between their sample period and 2003, I arrange mutual funds into two groups based on whether the fund has more than \$468 million in assets. I assume commissions and spread costs of 20 and 28 basis points, respectively, for the larger funds and 33 and 52 basis points, respectively, for the smaller. The resulting estimates for 2003 suggest that equity mutual funds likely paid approximately \$6.5 billion in brokerage commissions and incurred \$9.3 billion in spread costs. These estimates do not include trading costs for bond and money market funds.

Although some components of total costs are very rough estimates, it appears that investors paid approximately \$66 billion to invest through mutual funds last year. The majority of those costs went to pay fund managers and brokers to devise and execute trading strategies. A substantial portion of the remainder went to pay marketing and distribution expenses, including payments to brokers who recommended that their clients purchase a particular mutual fund.

What Do Mutual Fund Expenses Buy?

The costs detailed above vary considerably among mutual funds. Are higher costs associated with higher investor utility? This question implies two subsidiary inquiries. Do investors who purchase through brokers receive value commensurate with the brokers’ compensation? Does the level of operating expenses reveal information about value to investors?

The mutual fund industry has a large number of fund complexes and fairly low concentration. The natural starting assumption, then, is that competition will drive the price of services down to the marginal cost of providing those services—including personalized advice from the selling broker (if any), diversification, implementation of the fund manager’s trading strategy, account statements, check writing privileges and other administrative services—and investors will purchase mutual fund shares only if those services add value in excess of their cost.

Economists have argued, however, that when consumers are boundedly rational, prices can exceed marginal cost even in the presence of competition (Gabaix and Laibson, 2003). This is especially true when the producer adopts a nonlinear pricing scheme like those seen in mobile telephone calling plans or health club memberships (Della Vigna and Malmendier, 2003). Mutual funds, particularly those sold through brokers, have complex pricing schemes. It is also worth noting the possibility that regulatory constraints make a first-best system of mutual fund pricing unachievable. Of course, neither point demonstrates that mutual fund

services are inefficiently priced, but it does suggest that there is room for empirical inquiry into the relationship between costs and investor utility.

Such inquiries have produced a number of discomfiting results. Most notably, several studies conclude that investors' realized returns are negatively related to expense ratios (Elton, Gruber, Das and Hlavka, 1993; Malkiel, 1995; Carhart, 1997). Returns are also negatively related to estimates of trading costs (Livingston and O'Neal, 1996; Chalmers, Edelen and Kadlec, 1999). Investor returns net of sales loads are negatively related to the size of the load (Morey, 2002). Each of these results generates interesting interpretive questions.

It is well understood that tests of mutual fund performance are sensitive to the benchmarks used, and any test is accordingly a joint one of mutual fund performance and the underlying expected return model. Thus, Hortaçsu and Syverson (2003) approach the problem from a different angle by studying mutual funds whose expected returns are necessarily very similar. They limit their study to S&P 500 funds, which aim to track the return on the Standard and Poor's 500 index. For these funds, differences in expenses cannot convey information about the manager's stock-selection ability. Yet the authors find dramatic divergence in costs (measured as the expense ratio plus one-seventh of total loads). They interpret the results as suggesting the presence of two groups of investors—experienced investors who buy low-cost no-load funds and novice investors who rely on brokers and therefore purchase high-cost load funds.

As Hortaçsu and Syverson (2003) note, it is possible that a broker's advice is valuable to a customer even if it does not lead to the selection of mutual funds with superior risk-adjusted returns. Some investors may require guidance on issues unrelated to the return on a particular stock or mutual fund, such as the value of diversification, the differences among various categories of investments and their suitability given the investor's needs, and so on. The Investment Company Institute (2001) itself points out that many mutual fund purchasers are relatively inexperienced investors. Calculating the value of this advice is difficult. What would an unsophisticated investor have done absent the broker's advice? In any event, the value of generalized advice will not be reflected in superior returns on the investor's mutual fund investments.

This observation, however, raises an issue for the design of studies of the relationship between cost and performance. Starting with Jensen's (1967) pioneering study of mutual fund performance, researchers have often taken the expense ratio as a measure of the cost of the fund manager's investment advice *to the fund*, while the sales load, if any, is a measure of the cost of the selling broker's investment advice *to the investor*. Unfortunately, that connection has been weakened since 1980, when the Securities and Exchange Commission first permitted 12b-1 fees. Such fees are included in expense ratios, but are used principally to compensate selling brokers. Thus, the Investment Company Institute (2004) criticizes academic studies that use expense ratios as the measure of operating expenses, arguing that these studies should deduct 12b-1 fees from the expense ratio.

In light of the Investment Company Institute's criticism, I supplement

Table 3
Costs of Standard and Poor's 500 Index Funds
Excluding Sales Loads and 12b-1 Fees

N	87
Cost in basis points (1 basis point = .01%):	
Mean	42.1
Median	40.0
Minimum	8.0
Maximum	85.0
75 th percentile	55.0
25 th percentile	28.5
Standard deviation	19.3

Source: Center for Research in Securities Prices mutual fund database. Standard and Poor's 500 Index funds are identified by name and through the IndexFunds.com website. The sample excludes funds designated as "enhanced" or "managed" and share classes available only to institutional investors or other special classes of investors.

Hortaçsu and Syverson's (2003) study by estimating the dispersion in operating expenses among S&P 500 funds. I calculate expense ratios minus 12b-1 fees for all retail S&P 500 funds included in the Center for Research in Securities Prices data.⁶ Table 3 provides descriptive statistics. Even this narrow measure of operating expenses varies considerably, ranging from 8 to 85 basis points.

Economies of scale might explain some of the difference, with larger funds able to charge a lower management fee. In addition, load funds, which perhaps cater to less sophisticated investors, may charge higher management fees in addition to charging sales loads. I accordingly estimate the following regression for the mutual funds in my sample:

$$EXP_i = \beta_0 + \beta_1 * \log(TNA_i) + \beta_2 * LOAD_i,$$

where for mutual fund i , EXP_i is expenses (expense ratio minus 12b-1 fees), TNA_i is total net assets, and $LOAD_i$ equals one if the fund charges a load and zero otherwise.

Table 4 shows the regression results for two different specifications, one excluding the $LOAD$ variable and the other including it. In both models, larger funds on average have lower expenses, although size variation alone explains only 16 percent of the variation in my expense measure. Funds with sales loads have, on average, expenses that are 15 basis points higher than those without, and the

⁶ Like Hortaçsu and Syverson (2003), I treat each class of shares as a separate entity and exclude funds marketed only to institutional investors or other limited groups of investors, such as retirement plans. I also exclude funds designated as "enhanced" index funds, which are not entirely passive.

Table 4
**Costs of Standard and Poor's 500 Index Funds
 versus Fund Characteristics**

<i>Variable</i>	<i>Model 1</i>	<i>Model 2</i>
(Intercept)	57.7 ^a (4.22)	46.5 ^a (4.69)
Log of net assets	-3.25 ^a (0.785)	-2.57 ^a (0.736)
Indicator for load funds		15.0 ^a (3.58)
Adjusted r-square	0.16	0.29

Notes: The dependent variable is the expense ratio minus 12b-1 fees (expressed in basis points) for each retail S&P 500 index fund contained in the Center for Research in Securities Prices data as of September 30, 2003. Standard errors are in parentheses.

^a significant at $p < 1\%$.

inclusion of the LOAD variable substantially improves the predictive power of the model.

The results are what we would expect if mutual fund purchasers include a mix of sophisticated investors who are sensitive to costs and unsophisticated investors who purchase the mutual funds their broker recommends and are not sensitive to costs. The total investments of the former group appear to be much larger. Vanguard's S&P 500 index fund, a pure no-load fund with a cost of 18 basis points, is by far the dominant mutual fund in the category, holding 57 percent of the aggregate assets of the funds in my sample. A substantial majority of assets are held by the low-cost funds in the sample. Of course, index funds may be particularly attractive to sophisticated investors who suspect that active management does not add value.

So far, I have emphasized transactional or annual expenses that the investor or the mutual fund pays pursuant to explicit agreements with the fund manager or third parties. However, mutual fund managers may also be able to extract compensation from mutual fund assets that is not explicitly bargained for. This possibility underlies many of the recent legal proceedings concerning mutual fund management and is the focus of the next section.

Hidden Costs of Mutual Fund Investment

Although the brokerage fees and spread costs described in the prior section are paid to third parties, they have the potential to shift costs from the fund manager to the fund itself. In addition, the mechanics of setting the current net asset value of a mutual fund enable management companies to offer favored

traders arbitrage profits in return for investments that increase the mutual fund's size and thus the manager's fees.

Directed Brokerage and Soft Dollar Commissions

A mutual fund pays brokers to execute portfolio transactions and to provide research, while the same brokers may recommend the mutual fund to their retail customers. When deciding which broker to use for portfolio transactions, some mutual funds take into account the broker's efforts to sell the fund's shares, a practice known as "directed brokerage." Directed brokerage creates two conflicts. Brokers may face a conflict between obtaining more brokerage business from the mutual fund and giving investors unbiased advice on which mutual fund is best suited to their needs. Fund managers may face a conflict between maximizing the sale of fund shares and obtaining brokerage services at the best quality and price available.

Brokers often provide research services to fund managers together with trade execution. Under so-called "soft dollar" arrangements, the cost of research services and execution may be bundled into the broker's commissions. The research services provided may include general-purpose items such as computer terminals and communications facilities. These arrangements give investment advisers a means of shifting costs that they would otherwise pay from their own resources to the mutual fund itself (Siggelkow, 1999).

Rules of the National Association of Securities Dealers forbid brokers to consider their receipt of commissions from a mutual fund's portfolio transactions when deciding whether to recommend that fund's shares to a client. The rules also require the broker to provide best execution to its mutual fund customers. Similarly, the Securities and Exchange Commission has provided interpretive guidance on when soft dollar practices are "reasonable." Nevertheless, the current rules may not be fully effective.

Livingston and O'Neal (1996) estimate that between 1989 and 1993, mutual funds paid an average brokerage commission of approximately 6 cents per share traded. During the same period, discount brokers offered commissions of 1 to 2 cents per share traded. There is accordingly reason to suspect that a substantial portion of commissions that mutual funds pay consist of soft money—perhaps \$4 billion or more of the \$6.5 billion I estimate for the most recent year. Chalmers, Edelen and Kadlec (1999) find that individual mutual funds' brokerage commissions and spread costs are positively correlated. If a fund paid higher commissions for superior trade execution, we would expect a negative correlation between commissions and spread costs. Again, the evidence is consistent with substantial use of soft dollars. Most importantly, trading costs are positively correlated with expense ratios. The theory under which soft dollars are permissible is that they reduce the manager's out-of-pocket expenses and the manager can then pass those savings along to the fund in the form of a lower management fee. The evidence, however, does not support the theory. The positive correlation again suggests that there are cost-sensitive and cost-insensitive mutual funds.

Stale-Price Arbitrage Losses

The price at which a mutual fund's shares trade does not arise through a minute-by-minute interaction of buy and sell orders, but through the fund's calculation of its net asset value. Mutual funds calculate their net asset value only once daily, generally at 4:00 p.m. Eastern time. The mutual fund then executes buy and sell orders placed that day at a price equal to net asset value. State and federal enforcement actions in late 2003 alleged that some brokers and fund managers permitted favored investors to trade at "stale" prices that did not reflect available information, thereby allowing a nearly risk-free profit. A description follows of the two principal forms of stale-price arbitrage, known as late trading and market timing.

"Late trading" occurs when a broker permits a customer to place orders after the close of trading, while still receiving a price based on that same day's net asset value. Investment Company Act Rule 22c-1 requires "forward pricing," that is, a fund must fill any orders it receives at the *next* calculated net asset value. Forward pricing prevents the risk-free arbitrage that would occur were an investor allowed to make a trade today using yesterday's price. Prior SEC guidance stated that an order is "received" when it is placed with a broker or other intermediary. Thus, an order placed with a broker at 3:00 p.m. and then transmitted as part of a batch of orders by the broker to the mutual fund at 5:00 p.m. could be filled at the same day's net asset value because the broker received the order before the 4:00 deadline.

This practice enables brokers to permit favored customers to submit orders after the 4:00 p.m. deadline but still receive the same day's net asset value. Canary's late trading in Bank of America mutual funds, as described in an SEC (2003a) enforcement release, provides an example. Bank of America owns a mutual fund management subsidiary and a broker-dealer subsidiary. An account executive at the broker-dealer permitted Canary to submit orders after 4:00 p.m. that were forwarded to Bank of America mutual funds as part of the broker's batch of orders. The account executive created a false audit trail making it appear that the Canary orders had been received prior to 4:00 p.m.

In return for the opportunity to late trade, Canary agreed to invest on a long-term basis in various Bank of America-sponsored investment vehicles and pay an annual "wrap fee" of 0.5 to 1.0 percent of all Canary investments made through Bank of America. The investments in Bank of America mutual funds and the wrap fee generated revenues for Bank of America's mutual fund management and brokerage subsidiaries. At the same time, the late trades diluted the value of other investors' shares. Canary was allowed to buy (or sell) at prices that were too low (or high) given information released after 4:00 p.m. In effect, then, the broker gave Canary free call and put options on the mutual fund shares at 4:00 p.m. prices, but expiring an hour or more after 4:00 p.m., with the cost of the options borne by the other mutual fund shareholders.

The "market timing" issue arises because in some cases, the prices of securities used to calculate net asset value are not current. The problem is most obvious when

a mutual fund invests in non-U.S. stocks. The principal market for those stocks may have closed hours prior to the U.S. close. Even a domestic security may have last traded some time prior to the close. This is particularly true for less-liquid assets such as corporate bonds or small-capitalization stocks. The use of stale prices makes it possible for a trader to take advantage of information released after the last trade in foreign stocks or other assets, but prior to 4:00 Eastern time, based on information suggesting how the assets' price will change when trading reopens.

Unlike late trading, nothing marks an individual market timing trade as obviously improper. Any unsophisticated and uninformed investor could submit an order at an opportune time by chance and receive the benefit or suffer the loss from a stale price. The deliberate attempt to exploit stale prices, and not the occasional fortuity of benefiting from them, defines "improper" market timing.

Regulators have alleged that some mutual fund managers claimed to be taking aggressive steps to prevent deliberate market timing, but in fact permitted favored customers to engage in that activity. The essence of the claims, then, is that the fund managers misled shareholders into believing that market timing was not a problem.

The tell-tale sign of deliberate market timing is a high frequency of trades in and out of the fund. Frequent trades, whatever their motivation, create transaction costs for the mutual fund that are ultimately borne by long-term shareholders. No legal rule defines and prohibits excessive trading of mutual fund shares. In fact, a small number of mutual funds explicitly accommodate investors who wish to trade frequently. But mutual fund prospectuses usually state that the fund is intended for long-term investors and not in-and-out trading. Some funds charge a fee for redemptions that follow a purchase by less than a defined period (often 90 days). Other funds state that they limit the number of round-trip buying and selling transactions in a particular year. In addition, mutual fund prospectuses often reserve the right to refuse to execute individual trades if they are detrimental to long-term shareholders.

A mutual fund may also attempt to attack the problem of stale prices directly. Rule 2a-4 under the Investment Company Act of 1940 states that mutual funds should, where possible, use "current market value" to calculate net asset values. When current market value is unavailable, the fund should use the "fair value as determined in good faith by the board of directors." The SEC (2001) has expressed the view that a market value is not "current" when a "significant event" has occurred since the close of the principal market.

Fund managers may be able to estimate the current value of a foreign stock whose principal market is not open by reference to similar assets traded in the United States. For example, American Depositary Receipts (ADRs), which trade on U.S. stock markets, represent shares of specific foreign equities held on deposit by U.S. financial institutions. A mutual fund could base the value of its foreign stocks on the ADR closing prices, rather than the closing price in the home market. The fund could also estimate the value of a particular investment from futures prices or the prices of other traded assets.

However, the Securities and Exchange Commission has not explicitly approved

any particular method of fair valuation. Moreover, departing from market prices requires the exercise of discretion by the fund's board, both to determine that the last-trade price is not "current" and that the methodology used to calculate "fair value" is appropriate. Mutual fund boards have apparently been reluctant to use fair valuation.

The market-timing enforcement actions in fall 2003 involved two basic patterns. In one, a would-be market timer used the services of an intermediary to camouflage its market-timing trades so that the target mutual funds were unaware of the market timer's presence. In the second pattern, a mutual fund management company deliberately permitted a large trader to time its funds in return for making long-term investments in the management company's other mutual funds or investment vehicles. In a variant on the latter pattern, some management companies permitted their own officers or employees to market-time their mutual funds.

Canary, which was allegedly set up primarily for the purpose of market timing, used both strategies. Canary entered into an arrangement with Security Trust Company (STC), which operates an electronic trading service for institutional clients. STC allows the manager of a pension plan, for example, to aggregate all its beneficiaries' transactions on a particular day in the mutual funds that are available under the plan and then to send a single net order to each of the relevant mutual funds. STC agreed to permit Canary to make trades that were transmitted as part of STC's net orders to the mutual funds, thus hiding Canary's orders in a larger flow and evading the funds' limits and fees on short-term transactions. Canary agreed to cease trading in a particular mutual fund if that fund complained to STC about the size and frequency of STC's orders. STC agreed not to provide similar accommodations to any other investor.

Canary also entered into arrangements with mutual fund management companies, including those affiliated with Bank of America, Bank One and Janus. In each case, the management company allowed Canary to make in-and-out trades in designated mutual funds, not to exceed specified amounts (often 0.5 or 1.0 percent of the fund's total assets) on any one day. The typical agreement provided that Canary would make its trades through exchanges to and from a money market fund in the same fund family. Canary agreed to invest on a long-term basis in other mutual funds or private investment vehicles managed by the same management company. Some of the management companies provided Canary with frequent updates on the composition of the target mutual fund's portfolio, which obviously facilitated Canary's attempts to profit from stale prices. Under SEC rules, mutual funds publicly disclose the make-up of their portfolios only semiannually (increasing to quarterly beginning in May 2004).

Shareholder Losses

How much did other mutual fund shareholders lose because of stale-price arbitrage? Zitzewitz (2003) estimates the losses from stale-price arbitrage in international funds. He compares daily net asset values with a hypothetical "fair value"

net asset value that takes account of price changes in U.S. stocks and foreign equity futures occurring after the close of foreign markets. The paper multiplies the daily “error” in net asset value by total fund inflows or outflows, as relevant, to arrive at the dilution loss. Zitzewitz estimates that investors in international equity funds lost 56 basis points annually during the late 1990s.

Another estimate for a single mutual fund complex arose from New York state’s suit against Invesco Funds Group. Invesco permitted favored customers to time its funds over the objections of its own individual fund managers, who complained that market timing harmed their funds’ performance. In an internal memo that the attorney general’s office obtained during its investigation, an Invesco employee analyzed the risk-adjusted performance of the target funds and argued to senior management that market timing was costing the target funds 75 to 100 basis points per year (*State of New York v. Invesco Funds Group*, 2003).

Manne (2004) questions the normative significance of these estimates. He argues that investors care about realized returns, which are made public, and should be indifferent to the precise means by which fund managers extract their compensation from the fund. Competition among funds and search by investors will assure that agency losses, like explicit management fees and other expenses, are minimized.

However, a wide range of legal rules governing fiduciaries limit compensation to what is agreed upon at the start of the transaction. Indeed, securities regulation originally developed in England and the United States as a means to ensure that all costs associated with the flotation of a new company were disclosed to investors prior to their purchases (Mahoney, 1995). Securities laws can improve welfare by providing a standard-form contract that specifies the ways in which corporate promoters may extract their compensation (La Porta, Lopez-de-Silanes and Shleifer, 2003). The legal proceedings against brokers, mutual fund management companies and their executives for “improper trading” are based principally on the extraction of non-bargained-for benefits. It is, however, an interesting research question whether investors’ reduced demand for funds subject to market timing shifted part of the losses back to fund managers even before regulators intervened.

The Legal and Regulatory Response

Regulators have brought numerous civil and criminal proceedings against mutual fund managers, brokers and traders alleging improper trading in mutual fund shares. Meanwhile, the Securities and Exchange Commission, U.S. Congress and commentators have proposed a wide variety of regulatory changes. This section reviews these responses and identifies some underlying policy issues.

Legal Proceedings

Late trading and market timing schemes involved deceit against or by mutual fund managers and, in some cases, violations of explicit rules requiring forward

pricing. Thus, assuming regulators can prove the relevant factual allegations, the traders, brokers or mutual fund managers who devised and benefited from these activities will likely be found to have engaged in securities fraud and other violations. In short, the late trading and market timing schemes described above were illegal under existing law.

The federal securities laws give the Securities and Exchange Commission ample remedies against violators. These are summarized in Table 5. The SEC can impose some of these sanctions on its own through administrative proceedings without going to court (although the defendant may appeal to the federal courts). Others require the SEC to bring suit in federal court. Federal prosecutors can also bring criminal charges against defendants who commit “knowing” violations of securities laws. When the defendant is an individual (such as a mutual fund or brokerage executive), the threat of jail time is a powerful bargaining chip for the government. Organizations, however, cannot be jailed, but only fined, so the difference between civil and criminal charges is less significant.

A regulator or prosecutor, through a settlement or plea bargain, may also fashion a remedy through negotiation with the defendant. Canary, for example, settled with New York without admitting or denying wrongdoing. The settlement required Canary to pay \$40 million in restitution and cooperate with the state’s investigation of various mutual fund complexes. In settling securities fraud charges brought by the state of New York, some mutual fund management companies have agreed to reduce their management fees going forward. A restriction on future management fees is a condition a court might have been reluctant to impose; indeed, the SEC declined to seek a similar agreement in its own settlement negotiations. However, these settlements were a brilliant public relations stroke for Spitzer, as they attacked the most visible deduction from investor returns.

Finally, federal and state securities laws give affected investors the right to sue those who commit securities fraud. Soon after the state of New York and the SEC began bringing suits against mutual fund management companies, private plaintiffs filed class action lawsuits. Many of these lawsuits name not only the mutual fund management companies, but also the mutual funds under their management, as defendants. Formally, a mutual fund is liable for misstatements in its prospectus. But the assets in the mutual fund are for practical purposes just a portfolio owned by current investors. Should the court permit *past* investors in Fund X to recover their losses from *present* investors in Fund X, the net effect will be a simple wealth transfer from one innocent group of investors to another innocent group of investors, plus their lawyers. If the courts allow suits to proceed against the mutual funds, the resulting losses to current investors could easily dwarf those from improper trades.

Proposed Rule Changes

Although existing laws should prove adequate to punish those who devised and benefited from improper trading practices, these practices nevertheless raise important policy questions. First, why didn’t the Securities and Exchange Commission

Table 5

Remedies Available to the SEC in Civil Proceedings under Federal Securities Laws

<i>Judicial remedies</i>	
Monetary penalties	A court may assess penalties ranging from \$5,000 to \$100,000 for individuals and \$50,000 to \$500,000 for organizations for violations of the SEA, ICA or IAA. Alternatively, the penalty may equal the defendant's "gross pecuniary gain" from the violation. Penalties are paid to the U.S. Treasury except as noted below under "Disgorgement."
Injunction	A court may order the defendant to refrain from any "acts or practices" that violate the SEA, ICA or IAA. Failure to comply is punishable by fines and imprisonment.
Disgorgement	A court may order the defendant to forfeit any profit gained from the violation to the SEC, which distributes it to investors harmed by the violation. The Sarbanes-Oxley Act allows the SEC to supplement the disgorgement fund paid to investors with monetary penalties assessed for the same violation.
Prohibition on serving in specified capacities	A court may bar an individual defendant temporarily or permanently from serving in various capacities, including as a director or officer of a publicly traded company or mutual fund or as an investment adviser.
<i>Administrative remedies</i>	
Monetary penalties	The SEC has authority under the SEA, ICA and IAA to assess monetary penalties against certain regulated organizations and individuals, including broker-dealers and investment advisers and their professional employees, and mutual fund directors and officers. The penalties are generally of the same size available in judicial proceedings.
Cease and desist order	The SEC, after a hearing, may order any person who violates or causes a violation of the SEA, ICA or IAA to cease and desist from present and future violations. Failure to comply is punishable (through a court proceeding) by fines and imprisonment.
Disgorgement	In any proceeding under the SEA, ICA or IAA in which the SEC could impose a monetary penalty, it may also order disgorgement.
Prohibition on serving in specified capacities	The SEC may temporarily or permanently bar persons who engage in specified securities law violations from serving in various capacities, including as officers or directors of publicly traded companies or mutual funds, or as investment advisers.

Notes: The table lists the principal remedies available to the SEC in a civil suit brought in federal court or in an administrative proceeding under the Securities Exchange Act (SEA), Investment Company Act (ICA) or Investment Advisers Act (IAA). Special remedies related to insider trading are omitted entirely.

discover the late trading and market timing abuses until they had apparently become widespread? Second, although existing law will punish these improper trading practices after the fact, might different regulations have prevented these practices before the fact?

The Securities and Exchange Commission has proposed rule changes designed to resolve some mechanical pricing issues that made late trading possible. Other proposed rules will alter mutual fund corporate governance. One proposal is to require that orders be received by a mutual fund or its transfer agent, and not

just a broker, by 4:00 p.m. to receive the current day's net asset value (SEC, 2003b). Another would require additional prospectus disclosures about the costs that frequent trading imposes on long-term investors and the steps the fund takes to limit such trading (SEC, 2003c). Another would require, with some exceptions, that mutual funds impose a 2 percent redemption fee on shares sold within five days of the purchase (SEC, 2004b). Yet another would require investment advisers to monitor their professional employees' trades (SEC, 2004c).

These reforms would address some of the manifestations of manager/shareholder conflicts that surfaced in 2003, but they do not alter the managers' incentives to find ways to increase their compensation. In keeping with its view that the board of directors is the principal means of dealing with these conflicts, the SEC (2004d) has proposed revisions of its board independence requirements. Independent directors of mutual funds would have to constitute at least 75 percent of the total and include the chairman. The independent directors would be entitled to their own staff to advise on corporate governance and conflict of interest issues. But outside the mutual fund context, there is at best mixed evidence that independent directors constrain management compensation or improve shareholder returns (Wan, 2003). In the case of mutual funds, it seems implausible that an independent director would have been able to see how management companies exploited details of price setting and order execution to extract additional compensation. In fact, many of the mutual funds affected by the scandals already had a majority of independent directors.

Other proposed reforms may offer more promising ways to reduce agency costs. The General Accounting Office has suggested that quarterly mutual fund account statements disclose the investors' pro rata dollar share of the fund's expenses (SEC, 2000). Thus, an account statement might note that the investor's shares increased in value by \$120 for the quarter just ended and go on to note that the investor also bore \$15 of management fees, 12b-1 fees and other expenses for the same period. The SEC (2004a), however, has rejected this proposal in favor of a new requirement that a mutual fund's semiannual shareholder report include a table showing the dollar amount of expenses incurred per \$1,000 invested.

In the rush to adopt new rules, regulators have not asked whether existing investor protection rules unintentionally exacerbate manager-shareholder conflicts. The existing regulatory system encourages the segregation of sophisticated and unsophisticated investors into different investment vehicles with different compensation and governance arrangements. Because institutions and high-net-worth individuals are considered not to require the same protections as retail investors, they are permitted to invest in hedge funds, lightly regulated vehicles that typically use performance-based fees. Regulatory restrictions, by contrast, assure that the mutual funds offered to retail investors use asset-based compensation for fund managers. The compensation paid to brokers who sell mutual fund shares is set by the fund manager, rather than the brokers themselves. Mutual fund governance structures and contracts with fund managers and other service providers are regulated in detail. Although these restrictions were motivated by a desire to curb

manager-shareholder conflicts, they may have institutionalized these conflicts by limiting a fund manager's ability to experiment with new compensation or governance practices and by reducing retail investors' opportunities to invest alongside institutions that would monitor and control fund managers.

One alternative policy response, then, would be to try to harness the monitoring efforts of institutional investors for the benefit of unsophisticated investors. Rather than relax regulatory restrictions for investment vehicles sold only to institutions and high-net-worth individuals, perhaps compensation and governance restrictions could be reduced for investment vehicles that include a mix of institutional and retail participation. Any rule changes, of course, may produce unintended consequences, such as introducing conflicts between the interests of institutional and retail investors. Given the potential benefits of greater monitoring, however, the idea may deserve consideration.

Finally, the SEC might pay greater attention to patterns of flows into and out of mutual funds, which may convey information about the manager's attempts to attract investors and about market timing. When a particular mutual fund experiences wide swings in daily inflows, the SEC might ask whether the fund manager's tactics for attracting inflows are consistent with the interests of long-run shareholders.

Conclusion

Mutual funds give investors the benefit of diversification and, if the fund is actively managed, professional money management. Many large, well-known mutual funds provide these services at low prices. But how can unsophisticated investors know whether they are paying a reasonable price? A premise of current mutual fund regulation is that the market should set fees, but those fees should be transparent. In the mutual fund scandals of 2003, mutual fund managers secretly obtained extra compensation by selling the right to trade at stale prices. But even before the scandals unfolded, some researchers were asking whether the size of management fees and other expenses in some mutual funds suggested that investors lacked the sophistication to take appropriate account of costs.

It appears politically inevitable that the policy response to the mutual fund scandals will include a large number of new rules. However, it would be a mistake for researchers and regulators to focus only on what could be done with new rules, to the exclusion of what might be done by relaxing or altering existing rules. Unlike most of securities regulation, mutual fund regulation is not focused principally on disclosure, but tightly constrains compensation and governance practices. Regulators should consider whether those constraints have frozen nonoptimal practices into place.

To the extent new rules are needed, the traditional focus on disclosure and transparency may work best. The Securities and Exchange Commission has tried to draw investor attention to fees and other expenses in mutual fund prospectuses and

on its own website. It is therefore curious that the SEC has resisted calls for investor-specific disclosure of the dollar amount of fees and expenses in the quarterly account statements sent to investors. Given that industry-wide investor costs are measured in the tens of billions of dollars annually, even a modest increase in investors' sensitivity to costs could result in enormous aggregate savings.

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