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Securities and Exchange Commission  
450 Fifth Street, NW  
Washington, DC 20549-0609

**File No.: S7-11-04**

Ladies and Gentlemen:

**Introduction**

The SEC has proposed a rule that would impose a two-percent fee on mutual fund shareholders who redeem their shares within five business days of purchase.

I applaud the Commission for its efforts in protecting long-term mutual fund investors from having their returns "diluted" by short-term arbitrage trading in funds that are misvalued because of stale prices.

By way of introduction, I am a senior executive with an investment firm that focuses on hedge-fund-style arbitrage strategies. I write, however, as an individual.<sup>1</sup>

The public discussion of this issue has focused on the problem of so-called "market timing" of mutual funds. The real problem, however, is stale prices in mutual funds, of which market timing is only one negative consequence. If the SEC eliminates stale prices, it will effectively eliminate market timing, as well as other potential inequities<sup>2</sup> in mutual fund investing.

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<sup>1</sup> In June, I will serve as founding chair of the New York State Society of Certified Public Accountants' Committee on Investment Management. For an example of a project in the area of valuations that I have led, see <http://www.iafe.org/upload/IAFEValuationConcepts.pdf>.

This comment letter has benefited from a critical review by and provocative questions from my colleague, Hal Lux, whom I thank.

<sup>2</sup> Revelations about "time zone" arbitrage have led to the SEC's current proposed rule on mutual fund redemptions. In arriving at the best rules, it is important to remember that "stale prices" can lead to other potential inequities. For example, three come to mind immediately:

Arbitrage trading, in general, is very beneficial to markets and investors. As traders seek to exploit natural market inefficiencies, they provide enormous liquidity to the markets and ensure that financial assets are correctly priced. Nevertheless, I strongly oppose time-zone arbitrage in mutual funds because it exploits an artificially set price, which results from fund managers' use of problematic pricing procedures.

Unfortunately, each potential solution to this problem has its own drawbacks; there is no silver bullet. That said, I would recommend that the Commission use one of two<sup>3</sup> approaches that attack stale prices rather than just time-zone arbitrage: fair value pricing or forward pricing.

## **Background**

U.S. mutual funds often price the foreign securities in their portfolios as of the underlying time-zone close of trading in the appropriate foreign markets. As a result, funds use prices that were determined long before the daily U.S. deadline for submitting mutual fund orders and setting of the fund's net asset value (NAV). During that lag, markets can move dramatically, resulting in mutual fund prices that no longer reflect publicly available information. "Market timers" or "time zone arbitrageurs" attempt to exploit the timing mismatch by either buying an under-priced fund or selling out of an over-priced one, and subsequently reversing those trades when the closing price more closely approximates the fair value price. Because of the "artificial" arbitrage opportunities created by traditional mutual fund pricing

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First, a long-term investor plans an investment in a fund that contains foreign securities. The investor times his initial investment to coincide with a day that US securities rose. The greater the rise, the more likely that the investor has bought into someone else's gain.

Second, a long-term investor plans to withdraw from a fund that contains foreign securities. The investor times her withdrawal to coincide with a day that US securities declined. The greater the decline, the more likely that the investor has unloaded her loss to remaining investors.

Third, a long-term tax-exempt institutional investor wants to "enhance" the results of its investment in a mutual fund that holds foreign securities. It makes its initial investment. The first time more than 90 days after the initial investment that U.S. markets drop, the institution unloads its shares. The next time that U.S. markets rise, the institution reinvests in the fund. The first time more than 90 days after the second investment that U.S. markets decline, the institution divests its shares. The cycle can repeat many times.

<sup>3</sup> Alternatively, allow the mutual fund to choose from those approaches.

practices, an arbitrageur can profit from nearly riskless trades at the expense of small investors holding funds for long-term appreciation.

In addition to the **wealth transfer**, from long-term investors to arbitrageurs, created by these stale prices, the high fund turnover of time-zone arbitrage increases **transaction costs** for mutual funds and their long-term investors. **Wealth transfer**, however, could be the bigger problem for long-term investors. (See Appendix A.)

I have considered five approaches to solving this problem and protecting longer-term investors:

1. A five-day ban on redemptions;
2. Pricing of all securities at the market's next closing price;
3. Pricing of all securities at the market's next opening price;
4. A two-percent redemption fee on investments held less than five business days combined with mandatory identification of beneficial owners; and
5. Mandatory fair-value pricing.

For purposes of this discussion, assume the following facts, which reflect the conditions in today's markets:

- U.S. markets open at 9:30 am<sup>4</sup> and close at 4 pm
- The fund values its securities at 4 pm each trading day
- Some of the fund's securities trade on the Tokyo Stock Exchange (TSE)
- The TSE opens at 8 pm, the day before valuation in the U.S., and closes at 2 am, the day of valuation
- A Nikkei 225 futures contract trades on the CME in USD as late as 4:15 pm
- JPY/USD currency contracts trade as late as 4 pm on the interbank market

### **No redemptions allowed for five days**

This approach has three problems. First, it limits the freedom of U.S. investors to do what they want, when they want, with their own assets. Second, this method could drain some liquidity from the

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<sup>4</sup> Unless otherwise specified, all times in this paper are EDT

market. Third, for some funds, market timers can buy or sell futures contracts, American Depository Receipts (ADRs), or exchange-traded funds (ETFs) to complete arbitrage transactions. Since traders would now have to pay transaction costs, arbitrage opportunities would close for smaller time-zone moves, but it would continue for larger ones.

### **Use the market's next opening price**

This is a forward-pricing approach. Arbitrageurs lose the opportunity to take advantage of stale prices as everyone will buy and sell at the up-to-date closing prices. Essentially, investors must place their orders to buy or sell a fund at a pre-determined time, but the price is only set when all the overseas exchanges for stocks in the fund have their next openings.

As with the next closing price, the SEC could change the current 4 pm deadline for placing mutual fund orders to maximize investor convenience and minimize the pricing cycle. For example, a 7:30 pm cut-off time might be more convenient for many investors, and reduce the pricing cycle to just fourteen hours if the fund held U.S., Japanese, and German stocks.<sup>5</sup> A 3:30 am deadline would require a sixteen-and one-half-hour window,<sup>6</sup> while a 9 am cut-off would lead to a nineteen-hour cycle.<sup>7</sup> While a 7:30 pm cut-off may be favorable to U.S. investors on both the East and West Coasts, the shift to a different deadline for mutual fund orders, especially one outside of normal business hours, could also be burdensome to U.S. fund companies, which would have to re-tool their processing environments, a cost of which the funds' shareholders would bear. A 3:30 am deadline is inconvenient to both investors and funds, while 9 am has the largest window, which means the time between the investor's placing the order, based upon market information, and the time of valuation would be the greatest.<sup>8</sup> Of course, a fund that held, for example, U.S., Brazilian, and Australian stocks would have a different cycle.

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<sup>5</sup> Fourteen hours at 7:30 pm would include the same-day 8 pm open in Japan, the next-day 4 am open in Germany, and the 9:30 am open in the U.S.

<sup>6</sup> Sixteen-and-one-half hours at 3:30 am would include the same-day 4 am open in Germany, 9:30 am open in the U.S., and 8 pm open in Japan.

<sup>7</sup> Nineteen hours at 9 am would include the same-day 9:30 am open in the U.S. and 8 pm open in Japan, and next-day 4 am open in Germany.

<sup>8</sup> This discussion ignores the possibility that countries that switch between daylight savings and standard time may not do it on the same day, which complicates the matter further.

This solution has other drawbacks. Some stocks may not trade significantly, or at all, when the markets open. The time lag between placing an order and getting a price for the fund may be troubling to some investors. Furthermore, investors may have to give up the convenience of selling out of one fund and buying into another, in a mutual fund family, on the same day, if the fund they are redeeming is priced after the fund they are buying.<sup>9</sup> Moreover, besides losing this convenience, the fund would have uninvested cash for one day, which would dilute the fund's return, another cost to the investor. Therefore, this approach should eliminate market timing, but it could create other concerns.

### **Use the market's next closing price**

This is another forward-pricing approach. A significant advantage over the previous solution is that the generally high volumes at the close help ensure that these prices are reliable. Essentially, investors buy or sell a fund by a set time in the U.S. but the price is only set when all the overseas markets, related to the fund, have their next close.

As part of this solution, the Commission might also decide to change the current 4 pm deadline for accepting mutual fund orders. The deadline for accepting mutual fund orders can be set to maximize investor convenience and minimize the pricing cycle. Some likely times would be 9:30 am, which matches with the opening of US stock markets and would result in a sixteen-and-one-half hour pricing cycle; 3:30 pm, which is close to the current close and would result in an eighteen-and-one-half-hour cycle; or 1:30 am, which leads to a fourteen-and-one-half hour window.<sup>10</sup>

The drawbacks to using the next opening price also apply to this approach and the various deadlines. And, the SEC should consider the extra cost of any time shifts to mutual fund companies, which are organized around the closing time of the U.S. markets. Also, investors

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<sup>9</sup> For example, if an investor puts in a sell order for a U.S. fund with German stocks, which would be priced at 4 am, and a buy order for U.S. fund with Australian stocks, which would be priced at 8 pm, the previous day, the timing mismatch could create complications for the investor or the fund company, *i.e.*, how can someone buy a U.S. fund with Australian stocks at 8 pm the previous day with the proceeds from the sale of a U.S. fund that holds German stocks, if the investor does not know the value of the fund to be sold?

<sup>10</sup> This assumes closing times for the various overseas markets used in the previous section.

may be uncomfortable waiting so long to find out what price they have received for their funds, given the lag between the arrival of market information, on which they have based their investment decision, and the timing of valuation. Moreover, simultaneous buy and sell orders from investors, meant to transfer assets from one fund to another fund, might be impossible to complete on the same day because of different closing times.

While this approach should eliminate market timing, buyers and sellers may face even greater uncertainty than they would by using the next day's opening prices.

### **Impose a two-percent redemption fee on investments held less than five business days, and require identification of shareholders**

This potential solution effectively introduces a bid-asked spread to mutual funds because the asking price will be two percent less than the bid price for investments held less than five days. This approach raises some unique problems. First, the SEC would essentially be setting fees. The SEC has previously expressed concerns that becoming involved in fees would be an inappropriate government activity.<sup>11</sup> It is not clear why the Commission would choose to make an exception in this case.

Second, market timers would still be able to buy or sell futures contracts on individual stocks, ADRs, or ETFs, on a representative range of stocks in some funds, to earn partial arbitrage profits.

To be sure, the Commission's proposal might reveal the identify of some market timers to mutual fund companies, as some arbitrageurs might still trade in and out of funds, if the profits to be earned exceeded the two percent penalty.<sup>12</sup> Determined market timers, however, will find ways to get around the rule. Market timers using derivative financial instruments, *e.g.*, swaps, to mask their identities,<sup>13</sup>

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<sup>11</sup> [http://www.philly.com/mld/inquirer/business/personal\\_finance/8195128.htm](http://www.philly.com/mld/inquirer/business/personal_finance/8195128.htm)

<sup>12</sup> The benefit to mutual funds is that they can kick out perceived market timers, albeit after the fact, which they believe will profitably pursue such a strategy even with a two-percent penalty.

<sup>13</sup> Proposed rule 22c-2 only requires information about beneficial owners; those who opt for economic exposure through swaps are not beneficial owners. Therefore, market timers, whom the fund has not prohibited from purchasing shares, may be able to continue to trade, anonymously, through a derivative.

would still be anonymous. Moreover, market timers can use an unlimited number of limited liability companies, S corporations, and partnerships, each with its own Taxpayer Identification Number, to prevent the fund from learning the investor's identity. Therefore, funds may not be able to confirm that fund intermediaries are properly assessing the redemption fees, or funds may not be able to detect banned market timers who are trading through different accounts.

The Commission could eliminate more arbitrage activity by extending the ban, for example, to 90 instead of five days. Of course, the longer period would only exacerbate the problem of restricting what investors can do with their assets.

The real problem is that this solution only addresses market timing-related transaction costs and not the problem of wealth transfer.<sup>14</sup> In summary, this approach will eliminate time-zone arbitrage of small mispricings and arbitrage in funds where there is no alternative to buying and selling the actual fund. Larger mispricings, however, would continue to exist, the Commission would be going against its stated philosophy on setting fees, and market timers may still go undetected. Moreover, issues of stale prices unrelated to time-zone arbitrage would remain unaddressed.

### **Require fair-value pricing**

Fair-value pricing is a solution that would truly eliminate the stale prices that give rise to mutual fund timing. A "sure thing" would now become a speculative bet, which would drive away arbitrageurs from mutual funds, eliminating both the wealth transfer and transaction costs issues.

Unfortunately, this approach would introduce a degree of subjective judgment in pricing that might be troubling to investors and funds.<sup>15</sup> Fund managers, with all available market information, would adjust

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<sup>14</sup> Thus, an investor who has held a mutual fund for a period longer than five days can sell his shares and reinvest one day later, with no penalty, to avoid a potential loss, as illustrated in Exhibit A. This example is a good reason why the SEC should focus on stale prices, rather than just market timing. Stale prices can lead to other instances of wealth transfer. The proposed rule, unfortunately, does not deal with this scenario.

<sup>15</sup> Hedge funds that engage in arbitrage trades, *e.g.*, convertible arbitrage, look for mispriced securities relative to each other, and buy the underpriced one and sell short the overpriced one. They rely upon fair value pricing models. Mutual funds would be relying on the types of models that hedge funds use.

prices for stocks around the deadline for buying and selling funds. Smaller and less sophisticated fund companies might find it somewhat complex and difficult to implement this approach. Funds would need to develop appropriate models, and investors would have to become comfortable with the concept of securities prices unreported in the morning newspaper. Also, it would be difficult to measure the efficacy of this approach based on a back test of historical data because there is no reliable data at the time of valuation.

In time, and at some cost, I believe that the fund industry could overcome these problems. Other parts of the investment world—like the hedge fund industry—successfully use this approach. It should be possible to arrive at fair and workable models. The larger fund complexes have the resources to build models internally. For the smaller shops, some independent companies<sup>16</sup> already offer fair value models for mutual funds. Other independent companies currently have the expertise and incentive to develop commercially available analytics.

With Japanese stocks, for example, a mutual fund fair value model might look at the Nikkei 225 futures contract that trades on the CME,<sup>17</sup> the foreign exchange movement for that day, and the beta of the security relative to the index. In certain instances, it would be appropriate to substitute an ADR or ETF for the futures contract.

No solution is perfect. For the Japanese market, it is highly likely that there will be a difference in the 4 pm value and the subsequent 8 pm open. The short-term idiosyncrasies of all financial markets; the relatively thin trading volume in some the futures markets; and the information that will continue to flow during the four-hour time gap are some reasons that the two prices likely will be different. Moreover, if there is a systematic bias to the fair-value methodology, market timers might try to exploit that inefficiency.

Fair value pricing, in some markets, will be quite subjective and complicated. For example, Russian securities, a popular investment this year, do not have a futures contract that trades in the U.S. It would probably be necessary to use a multi-factor model that includes such variables as performance of the U.S. markets, European markets that close after Russia, and performance in other emerging markets.

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<sup>16</sup> See, e.g., <http://www.itqinc.com/research/fvm.html> or [http://www.ftinteractivedata.com/products/data\\_type/evaluated/fair\\_value.shtml](http://www.ftinteractivedata.com/products/data_type/evaluated/fair_value.shtml)

<sup>17</sup> See Appendix B for a simplified model.



Nevertheless, a fair-value calculation for this type of market would come with a higher degree of uncertainty.

There will always be a degree of subjective judgment inherent in this approach. For example, assume an overseas stock closes at \$20, thirteen hours before the close of the U.S. market. During trading hours in the US, the market soars ten percent after a major new North Sea oil field discovery announcement. How does one "fair value" the overseas stock, which is historically highly correlated with the prior's day trading in the U.S.? One fund may value that security at \$21.50, another one at \$22, and a third at \$22.50. Which one of these prices is correct? The honest answer is: "No one knows." On the other hand, whether it is \$21.50, \$22, or \$22.50, what is certain is that any of those prices is closer to fair value than \$20.

To ensure that funds are acting in good faith, the Commission, using its bully pulpit of education, can publish a list of funds and a metric for each fund that measures how close the value approximates the next open.

There will be still other issues. Fund shareholders will have to bear the cost of implementing fair-value pricing. Funds will have to arrive at a process for calculating fair value rather quickly after 4 pm. Since some funds will need outside expertise and assistance, the SEC should encourage the growth of independent parties to develop these models.<sup>18</sup> Yet, the Commission will need to recognize that independent appraisers may not prove to be completely independent.<sup>19</sup>

Even if these values come with an inherent degree of uncertainty, they will be a significant improvement over the stale prices that funds currently use. And, this approach should meet the SEC's goal of driving arbitrageurs out of mutual funds, as a "sure thing" becomes a speculative bet.

## **Conclusion**

The Commission intends "to reduce or eliminate the opportunity of short-term traders to exploit other investors in the mutual fund." I believe that out of all the possibilities I have studied, fair-value pricing

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<sup>18</sup> The SEC should consider banning the use of soft dollars to pay for any independent valuation service.

<sup>19</sup> <http://www.sec.gov/litigation/admin/ia-2201.htm>

and forward pricing are the best ways to accomplish this goal, while minimizing new problems, such as decreased market liquidity and inappropriate government involvement in markets. No solution is perfect, but these are clearly the most attractive alternatives.

Solution	Eliminates stale prices?	Other concerns
No redemptions allowed for five days	No	Loss of investor control over assets
Use the market's next opening price	Yes	Problems quickly transferring assets between funds
Use the market's next closing price	Yes	Problems quickly transferring assets between funds; Adds uncertainty
Impose a two-percent redemption fee on investments for less than five business days, and require identification of investors	No	Government restrictions on markets and investing; Real Identity can be hidden
Require fair-value pricing	Yes	Introduces subjective judgment

Respectfully submitted,

Leon M. Metzger

## APPENDIX A—The Wealth Transfer Effect from Stale Prices

		X	Y	Total
Day 1				
a	Initial Capital	\$1,000.00	\$0.00	\$1,000.00
b	Capital Contribution		250.00	250.00
		<u>\$1,000.00</u>	<u>\$250.00</u>	<u>\$1,250.00</u>
c	Appreciation	80.00	20.00	100.00
d	Ending Capital	<u>\$1,080.00</u>	<u>\$270.00</u>	<u>\$1,350.00</u>
	Wealth Transfer because of Mkt Timing	<u>-\$20.00</u>	<u>\$20.00</u>	<u>\$0.00</u>
	Appreciation %		10%	
	Y after Cap-Contribution %		20%	
Day 2				
e	Initial Capital	\$1,080.00	\$270.00	\$1,350.00
f	Capital Contribution		-270.00	-270.00
		<u>\$1,080.00</u>	<u>\$0.00</u>	<u>\$1,080.00</u>
g	Appreciation	-122.73	0.00	-122.73
h	Ending Capital	<u>\$957.27</u>	<u>\$0.00</u>	<u>\$957.27</u>
	Wealth Transfer due to Mkt Timing	<u>-\$24.55</u>	<u>\$24.55</u>	<u>\$0.00</u>
	Appreciation %		-9.091%	
	Y after Capital Withdraw %		0%	
	Total Wealth Transfer	<u><u>-\$44.55</u></u>	<u><u>\$44.55</u></u>	<u><u>\$0.00</u></u>
	Wealth Transfer as a % of Initial Capital	<u><u>-4%</u></u>	<u><u>18%</u></u>	

In this example, a small investor, X, owns \$1,000, or 100 percent of the Fund, which only owns foreign stocks. Near the end of the Day 1, an arbitrageur, Y, knowing that US markets rose by around ten percent, buys \$250 worth of shares, which effectively gives him twenty percent ownership of the fund. The Fund, which does not use fair value pricing, rises by ten percent, or \$100. Instead of all \$100 going to X, twenty percent is transferred to Y.

Near the end of Day 2, Y, knowing that US markets retreated to around their levels of the beginning of Day 1, about -9 percent, redeems all of his shares. The Fund, in fact, declined by about nine percent, or \$123. Instead of the fund's allocating twenty percent of the loss to Y, all of that goes to X.

Using stale prices transferred \$45.55 of wealth from X to Y, or a 4% loss to X and 18% gain to Y over a period when the underlying securities' values did not change. And, this scenario does not even consider transactions costs.

**APPENDIX B—Using Futures Markets to Predict the Next Day’s  
Opening Price for Purposes of Fair Value Pricing**

OSE Close	OSE Next Day Open	CME Close	Error Using OSE Close	Error Using CME Close
10060	10120	10160	0.59%	0.40%
10110	9990	10020	1.20%	0.30%
9910	10020	10000	1.10%	0.20%
10100	10220	10195	1.17%	0.24%
10160	10500	10250	3.24%	2.38%
10450	10220	10250	2.25%	0.29%
10240	10280	10305	0.39%	0.24%
10100	10100	10170	0.00%	0.69%
10100	10240	10275	1.37%	0.34%
10280	10220	10230	0.59%	0.10%
10350	10360	10380	0.10%	0.19%
10440	10450	10465	0.10%	0.14%
10460	10640	10590	1.69%	0.47%
10870	10950	10960	0.73%	0.09%
10850	10850	10870	0.00%	0.18%
10740	10760	10785	0.19%	0.23%
10870	10930	10940	0.55%	0.09%
10850	10750	10775	0.93%	0.23%
10850	10860	10920	0.09%	0.55%
10650	10710	10690	0.56%	0.19%
10830	10950	10915	1.10%	0.32%
11050	11040	11055	0.09%	0.14%
10980	11080	11065	0.90%	0.14%
11010	10980	11055	0.27%	0.68%
11090	10970	10970	1.09%	0.00%
10980	11080	11085	0.90%	0.05%
10920	10810	10860	1.02%	0.46%
10880	10730	10665	1.40%	0.61%
10810	10750	10780	0.56%	0.28%
10780	10780	10760	0.00%	0.19%
10790	10780	10785	0.09%	0.05%
10630	10600	10645	0.28%	0.42%
10420	10370	10380	0.48%	0.10%
10470	10490	10495	0.19%	0.05%
10440	10550	10545	1.04%	0.05%
10380	10430	10445	0.48%	0.14%
10450	10460	10445	0.10%	0.14%
10560	10560	10500	0.00%	0.57%
10670	10770	10710	0.93%	0.56%
10700	10780	10760	0.74%	0.19%
10760	10730	10725	0.28%	0.05%
10720	10750	10790	0.28%	0.37%

10890	10830	10860	0.55%	0.28%
10660	10640	10660	0.19%	0.19%
10680	10740	10740	0.56%	0.00%
10820	10860	10865	0.37%	0.05%
<b>Average</b>			<b>0.67%</b>	<b>0.30%</b>

This data contains the 45 days of prices for the Osaka & CME NK225 futures for mid-January through late-February 2004. If one uses the Osaka close to forecast the next day's open, one gets an average error of 67 basis points. If one uses the CME close to forecast the next day's open, however, one can reduce the forecast error to only 30 basis points. Clearly, if the fund manager adjusted NAVs by using the information contained in the open markets, the possibility for gaming would be much less. With a little effort, one could produce something more sophisticated, which would produce even better NAVs.