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Oversight Hearing on Mutual Funds: Hidden Fees, Misgovernance and Other Practices that Harm Investors

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Mutual Funds and Financial Flaws

Abstract. Mutual funds are vulnerable to abuses involving *market timing* and *late trading*. Primarily, this is due to a failure of governance, and the delayed nature of settlement of both payments and transfers. This vulnerability is only exploited over time, through a progression of small steps that, individually, raise no alarm, but in sum, cross the line of acceptable behaviour. Solutions to the abuses will be found not in more regulation, but in open governance and a move towards real time gross settlement.

Introduction

Mutual funds, and the advent of *market timing* and *late trading* abuses are much in the news. Today's topicality makes them worthy of study, but we must bear in mind that the flaws found within this sector are in no way unique to the mutual funds industry.

Indeed, we propose that the underpinnings of the mutual funds affair are equally applicable to our entire financial structure. Mutual funds, today, are the tip of the iceberg.

Progression

The progression from honest and efficient behaviour to the questionable events of the recent past is one of small, baby-like steps. No staff member of a financial firm sets out originally to break a law or, to help another break a law.

Each step is only a small change, from one posture to the next, and in comparison with the next or the last, an honest insider has great difficulty in seeing where each step is taking him or her. It is a slow process of inclusion and indoctrination that pulls the helpers into the web woven by the beneficiary of a crime. But in sum, these steps take the mutual funds sector over the line of acceptable behaviour.

Background

The observations herein are based on decades in back office finance work, specific experience over 3 years in the "capacity" business, and our search for a better solution [FC7].

Our search for a better solution culminated in the December, 2002 filing of a comprehensive package for a real time gross settlement ("RTGS") exchange and settlement system with the U.S. Securities and Exchange Commission ("SEC").

Layout

The situation is far too complex to do justice in one paper, or in one session. But, it is possible to show the essence of the progression, in three steps. These are, in turn, a) the development of capacity, b) the offering of market timing privileges, and c) the acceptance of late trades. We will describe each step, in turn, in the first section.

This progressive exploitation could not have taken place without some inherent weaknesses in the system. We believe that this weakness is a combination of governance failure and delayed settlement. The idle time that occurs between the signalling of intent to trade, and the final transfers are completed represents fertile ground for fraud. And, the lack of a good governance model permits that fraud to take place. This situation is described in the second section.

In the final, concluding section, we propose the way forward. Out solutions are predicated on the complexity of the modern financial system, and the need to address the fundamental failure of trust in a complex system. As time goes on, these premises become more true.

I. Mutual Funds and how they are Gamed

The exploitation of the flaws and weaknesses inherent in mutual funds derive from quite innocent beginnings. Yet, the flaws are so fundamental that, in three steps, the system can be totally perverted.

a) The development of capacity,

b) the offering of market timing privileges, and

c) the acceptance of late trades.

We will describe each in turn [Firms].

I.a Capacity

A Mutual Fund is fundamentally an investment, and offers returns based on long term placement of funds. Therefore, most funds benefit from having fairly simply and fairly slow records keeping.

In practice, cash settlement can take days, as wires delay in clearing, and funds are misrouted or lost. Underlying assets can take much longer, sometimes months to convert into cash.

This means that most funds need to maintain a working balance of cash so as to handle redemption orders. Generally, the cash maintained in these accounts is large enough to handle the average redemption order, but not larger ones.

When a mutual fund experiences a large redemption, it is in trouble. As the underlying fund assets need to be sold, and as they may experience a delayed settlement, sometimes exceeding the redemption period originally promised, there is a shortfall.

For years, enterprising funds have solved this by negotiating *capacity*: up-front lines of credit for large amounts. These credit lines are available to be secured by the underlying assets, and in effect, represent buyers-on-demand for the fund to tap when in need.

In this way, for a fee, a fund can handle a big redemption order even if the underlying assets take a while to sell.

I.b Market Timing

The nature of market timing is that of using information in one market to make winning trades in another. In the mutual fund industry, this often occurs when, for example, a fund specialising in instruments in one market updates its daily price (known as the Net Asset Value, or NAV) based on movements in the value of its portfolio, but other, more dominant and larger instruments or markets can predict the fund's assets.

Protecting the Shareholders

> A hypothetical AsianFund invests in the rice futures market in Hong Kong. The market opens at 9am local time, which is well after the closing of the New York rice market, a much bigger market.
>
> Prices on close in NY indicate the movement of rice futures in Hong Kong the next morning, information that is available to all. But, AsianFund does not use this information, instead it relies on the prices of the Hong Kong market to calculate its NAV.
>
> A smart market timer notices the correlation between the leading NY market, and the following HK market. He can put in an order to buy AsianFund shares on today's NAV, predicting that the price set at the 4pm NY close will drive up AsianFund units by several hundred basis points. He then sells a few days later at a profit.

When it comes to mutual funds, their reason for existence is to make money for the shareholders over the long run. They offer the ability to combine smaller holdings (generally from $50,000 up to $1,000,000) into a larger pool.

They do this by investing the pool over the longer term, so as to overcome the frictional costs incurred when the investment is first made.

To protect themselves for the benefit of all shareholders, mutual funds will often discourage any attempts at market timing. Any shareholders that try and engage in market timing might meet a variety of difficulties, such as having the trade declined, or even having their account closed.

The Link to Capacity

And, herein lies the link to capacity: those with large amounts of on-demand cash, standing ready to cover for large redemption orders, are only willing to do so at a price. Such capital, on call, does not come cheaply.

But, it is somewhat inconvenient to pay the price of that capital. By one means or another, the capacity providers and advisory firms that own the fund negotiate special dispensation to permit some trading that makes better use of the capacity.

This works for the advisory firm, because it obviates the need to offer large fees to the capacity provider, thus avoiding embarrassing entries on the balance sheet. And it works for the capacity provider, because as well as making a few basis points on a static loan for a few weeks, he or she can get in there and take some percentage points of profit over a short term market shift.

Both parties win. So, what's the problem?

Market Timing is Essential to the Financial System

Market timing is not illegal, nor wrong, in the general case. Market timing is a standard practice in all sectors of the financial field. It involves a risk taker watching the market closely, and taking advantage of movements in one market that have not reached another market as yet.

Another name is *arbitrage*; either way, it is an essential part of the financial structure. Arbitrageurs put their capital on the line, and make a profit on these inefficiencies. In this way, they move information from one market to another, and they move prices into line.

Arbitrage - or market timing - is the very essence of the efficient market hypothesis, the work by Harry Markowitz that underpins most of modern finance. Markowitz's theory asserts that the market prices are efficient, and, an efficient market delivers the best prices for retail investors. Only if market timers work at - and profit by - bringing markets into phase are the prices efficient and fair for investors.

Where market timing by mutual funds is of questionable nature is that the mutual fund was set up to not encourage fast, timing trades. In fact, ordinary shareholders are actively discouraged.

Advisory firms have thus created two classes of users - those that can "time the fund," and those that cannot. In effect, capacity providers are offered a package deal, or a quantity discount, that is simply not available to smaller players.

Again, there is nothing wrong with offering a package deal or a quantity discount. What is questionable is that the deal is neither offered to all, nor even standardised across those it is offered to. We do not need to dwell on whether fairness in contract terms is an issue here - the lack of documentation, scrutiny and openness of the timing deal raises serious questions of governance and fiduciary duty.

What went wrong?

What limits are placed on the market timer by the fund advisory firm? How much, how often, and at what cost to the fund? Where do the profits come from? What is this deal, anyway?

Let's skip the detailed analysis of fees and commissions and go right to the profits that the market timer is after. We can consider two equivalent funds, one with a market timer, and one without. The first gets hit with a fast trade that catches a shift up in prices, and the market timer cashes out with profits. The second fund suffers no such action.

The difference will be on the balance sheet. The first fund's balance sheet will show a dip in the Net Asset Value ("NAV"), equal to the profits taken out by the market timer. The second balance sheet shows a higher NAV, as no such profits were taken out. Thus, the remaining shareholders paid the profits of the market timer, in proportion to their holdings.

If we then recall that the advisory firm is remunerated partly on the value of the assets under management (typically 2% per annum), and also on a percentage fee of trades made, we now have both parties in alignment: the market timer wants maximum market timing, and the advisory firm is very happy to see lots of large, commission-rich trades.

From the small beginning of long term investments and a need for occasional big capacity hits, the funds have progressed into permitting short term market timing trades for special traders. The result is a deep, profitable and hidden transfer of value from one group of shareholders to another.

From being long term vehicles suitable for all shareholders, they have migrated slowly, special deal by special deal, into being siphons for the benefit of market timers.

This egregious result is not strictly illegal. No regulations were broken. And, often, the agreements held between shareholders and advisory firms do not forbid market timing. The advisory firms of funds are acting as their commissions tell them to act. It is only the actions and customs of these advisory firms that have created two classes of investor, one to play by the rules, and one to play by another set of rules that lets them benefit at the expense of the first class.

I.c Late Trading

In time, market timing becomes routine. The advisory firm realises that the market timer is contributing significant cash flow to the funds operations, through percentage trading fees. The minor inconvenience of shareholder losses is forgotten in the fight to keep ahead of the game, as far as the cost of the fund is concerned.

As the market timer builds a strong relationship with the advisory firm, often with the board of management of the firm, he or she detects further opportunities.

Subaccounting

As outlined, mutual funds benefit from having very simple records keeping. This task is often referred to as *subaccounting*, which refers to the combining of many shareholder accounts into one *omnibus account*, for the benefit of all shareholders.

Often, in order to further reduce costs, the entire subaccounting task will be outsourced to a brokerage firm that already has the systems in place. As the brokerage only reports net movements, the omnibus account, for simplicity, the advisory firm is further insulated from the activities of any one shareholder.

Clearly, there is a danger here, and brokerages might be expected to monitor for shareholder abuses such as market timing. But, whatever might be agreed up front, there is no incentive, and no checking or auditing, that encourages the brokerage to take on this tricky role for the advisory firm - like the advisory firm, the brokerage is remunerated on the fees generated by the trades.

Slowness of the system

In order to operate the subaccounting system, a manager at an advisory firm might need to manually enter in each trade. Often, this is done as an end of day task. If the day was busy, the task can be deferred until the following morning.

Of course, this means that shareholders' new orders that were entered in have to have pre-dated times allocated to them. In this way, when the records for a trade are entered the next morning, the time and date can be entered in retrospectively.

In order to manage the fund's price and sales, the price is adjusted daily, and a time for last orders is set, commonly 4pm New York time, on the trading day.

This is the market timer's new opportunity. Even though he or she can successfully predict the fund's NAV based on other market movements, capital is still at risk if the prediction proves wrong.

In the game of market timing, every hour counts. If the market timer can convince the hapless manager to back-date an order, the trade can be made more reliable. In fact, the market timer can even conceivably conduct the perfect arbitrage - a risk free purchase and sale for profit - by organising a trade to be accepted after the new price is guaranteed.

Hence, *late trading* is waiting until an arbitrage is guaranteed, or nearly so, and then submitting an order that is back-dated to before the close time, in order to get the better price. Of course, if the price moved the other way, the trade is simply not submitted.

By watching for the opening of the primary market, and guaranteeing the opening price, the trade is then entered into the mutual fund's subaccounting with a time and date back-dated to the previous day's price. As this is merely the act of a manager's entry, it is easy to achieve, and impossible to detect, as many trades are entered in this fashion.

Breach of Contract and Fiduciary Duty

How did this come about? The structures that were put in place, and the very strong relationships that were built up between the advisory firm and the market timer permitted extraordinary, but small steps to be taken in the favour of these special customers.

The market timer was already special. For the support staff conducting the work of entering trades, it was simply one more little quirk. It made no odds to the support staff what time was put on the order, as each staff member probably was not aware of when the order was really received.

The only difference between late trading and market timing, results wise, is that the profits are more reliable in late trading. In exactly the same way, a transfer occurs from the other shareholders to the late trader, for the amount of the profits, less the fees.

Again, late trading is not against trading regulations, for the simple reason that mutual funds are an unregulated sector of financial activity, and regulations are not directly applicable.

However, late trading is clearly a breach of fiduciary duty by the fund's advisory firm. Further, it is almost certainly a breach of contract, as the date for last orders, commonly 4pm each trading day, is a clearly stated and applied term, and that has been breached for some and not for others.

II. Problems at the Core

Any problem of the magnitude and breadth of the mutual funds scandal rides on several problems, not one alone. Below, we identify two issues that we believe are at the core of these issues.

II.a Governance

The obvious problem that afflicts mutual funds is a lack of governance - the protections normally put in place to keep safe the shareholders' assets against the current theft manipulated by outsiders and insiders working together.

Governance is the set of techniques that a firm employs to protect the shareholders' assets from all insider risks and threats. In this case, the mutual funds employed the least set of techniques they could get away with. This left the funds wide open to abuse.

Start-up Governance

As before, the failure of governance derives from benign and honest beginnings.

As a fund starts up, scrutiny is high, and the reputation of the firm is on the line for its good management - both, of the profits generated by the assets, and of the assets themselves.

Each new customer, and there are many in the early days, may closely scrutinise the fund, and depart quickly at the slightest sign of laxity on behalf of those managing the fund. This shareholder scrutiny acts in two opposing ways. Firstly, it reduces the scope for fraud, and thus reduces the risk need for strong governance. Secondly, it raises the profile of governance, and thus increases the marketing desire for more

governance.

The result is a decrease in the level of risk, and an additional high attention to governance. The governance that is put in place therefore has a very high effectiveness, and an early start-up fund is governed to a level well in excess of needs.

Additional factors are that costs are higher in the early days, yet the uncertainty of the fund's survival as a business is also high. Further, there are fewer assets. In the early days of a fund's life, a low level of governance would in fact be a very economic and sensible compromise.

These factors combine to make more cost-effective but lower level of governance highly potent, and a reasonable compromise in the start-up phase of a fund, even as firms tend to over-exceed those levels. To which extent each factor wins out and drives the governance equation is a matter for each individual firm. The generality remains, that funds are probably safest during their start-up phase.

Risks Grow as Governance Shrinks

But, governance is costly - and as such it is a cost to be borne by the shareholder. What was an efficient compromise in earlier days becomes inadequate in later days. What was supported as a marketing tool becomes a cost to be cut.

With success, and with time, governance shrinks, as measured against the assets to protect. Once a fund is into its third year, for example, it is generally profitable for the advisory firm. New customers are rarer, and existing customers are less attentive, so there is less need to impress them.

The asset base is larger and needs more protection. Yet, the pressure is on to reduce costs, so as to return more directly to stakeholders. Staff changes occur, and the overall investment "feel" changes to a more relaxed, long term approach.

And, the risks of insider fraud rise commensurately. Yet, in contrast to the rising risk of insider fraud, it is generally seen as ridiculous to propose that more money be spent on protecting the assets at this later point. The attitude now is one of the assets having been safe for the life of the fund, and they will be safe for the future.

The fund's governance switches, over time, small step by small step, from a zealous, over done approach in the high-scrutiny "take-off" phase, over to a lax, substandard, "holding pattern" in later life.

The Standard of Governance

Governance standards are normally set by regulators. Yet, the mutual funds sector is unregulated.

There are two possible avenues for governance to arise within the unregulated mutual funds sector: either they copy governance techniques from the existing regulated finance sector, or they develop them from scratch.

As the vast majority of mutual fund activity is run by financial industry insiders (be it major firms or individuals with a track record in that field) the governance has generally been borrowed from the regulated sector.

Governance by Mutual Funds

Mutual funds are generally governed with three tools: Firstly, a custodian is appointed to hold the assets. Generally, the custodian holds a subaccount at DTC with the assets of the fund in it.

Secondly, a transfer agent will be appointed to manage the shareholders. Each shareholder's details will be held in a subaccount, and each buy and sell will cause changes to those subaccounts.

More than likely, the transfer agent is a titular role only, as the agent is generally a captive, wholly owned subsidiary of the mutual fund, and operates out of the same office with only titular staff and assets. Further, the real shareholder management is generally outsourced to intermediary customers such as brokerages. The transfer agent then only sees the omnibus account of each intermediary, and not the individual shareholders.

Thirdly, an auditor is employed to scrutinise the books, generally once per year.

Governance *de novo*

In contrast to the above, there are fields of securities issuance that are unregulated, and have been denied or estranged from the benefits of a regulator's advice. These issuers have chosen to take an alternate path, Governance *de novo*.

This field includes issuers of digital gold currencies As this sector has a well developed sense of governance *de novo*, it is described here as a comparison to the governance of the mutual funds industry.

In this sector, firms employ the following techniques [5PM].

The issuer (the firm, in this model) stores the customers' assets - generally gold bars - in a trustworthy repository for precious metals. The issuer appoints an independent co-signatory who monitors those assets. Each redemption out of the repository then requires signs-off by the co-signatory. A manager is employed by the issuer to initiate the day-to-day activities of draw-downs and expansions.

Governance *de novo* goes further. In a well-governed but unregulated issuance, the digital derivative assets are totally separated from the underlying assets, role-wise. The above separation of roles over digital governance is thus duplicated. Governance partners in one side strive to have no access nor control to the assets of the other side.

A firm that meets good standards of governance will place the subaccounting system (generally, Internet servers) under the scrutiny and management of an independent operator. Further, a special subaccount will be created to permit the addition of new *float* and this account will be placed in the hands of a further, reliable and trustworthy person. Only that independent person, known as the Mint, will be responsible for creating new digital assets, as bars are acquired, or for retiring digital assets in the reverse process. Again, a manager will be appointed internally by the issuer to manage the day-to-day changes to the float.

With such techniques, each governance partner's role is simplified as each has only one task to perform. Unlike the case in sectors that are effected by regulatory governance, partners strive to not conduct more than one role [Float].

Public Scrutiny - the Fifth Party

The above model refers to four parties for each of the digital and physical assets, being the Issuer (common to both), and his appointed daily Manager, Mint/Co-signatory over assets, and the Repository/Operator.

Such an arrangement is as subvertible as any other, as the Issuer is capable of appointing insiders to the roles. It is the fifth party, the public, to whom we rely upon to scrutinise the changes over time, and to encourage eternal vigilance.

In a well-governed unregulated issuance, the asset base is a published and promulgated data point [Bars]. On the digital side of the balance sheet, the derivative issue is also published. This includes and publicises the size of the total derivative issued amount, and might also include managerial and other special accounts ("treasury"). All customer assets would be listed as one combined entry.

In this way the public is added to the above governance roles as a dynamic scrutinising presence: Customers can conduct their own audits on the balance sheet and compare the digital assets with the published accounts of bar holdings.

For this reason, the model is often called *open governance*, to reflect the role of the public in auditing the issuance.

In the informal world of digital gold currencies, the public is highly active. Scrutiny is ever-present, and often borders on the antagonistic. Independent customers of the services spark debate and trouble at the least sign of danger. These governance vigilantes often face vitriolic attacks by proxy agents and threats of litigation by immature issuers.

Under open governance, each issuer knows that every action will suffer the private auditing of not only the customers but also competitive and jealous noise generated by other issuers, as well. Under open governance, the standard is to improve governance as time passes and assets grow.

Under these circumstances, some DGCs have employed governance arrangements that exceed those of the biggest and best governed firms in the regulated securities industry, yet their total assets under management are often smaller than the bonuses paid to the advisory firm managers.

II.b Delayed Settlement

The less-obvious problem that left the mutual funds wide-open to abuse was the settlement system, and its basis in delayed payments and asset transfers.

Delayed settlement is a fundamental problem that underlies this case. And, almost every other risk - systemic, legal, operational, credit - inside the financial system today derives from its presence from the delayed settlement of payments, shares transfers, and trades.

How Settlement in Mutual Funds Occurs

Orders by a customer to buy and sell shares in a mutual fund go through a complicated settlement process. A simplified, salient description of the settlement of the shares is below, solely drawn out of for the purposes of highlighting the potential for fraud.

1. An order to buy or sell comes into a brokerage, from a customer.

2. The brokerage enters each order to buy or sell into a list of orders.

3. In general, at any time after 4pm and before about 11.30am on the next trading day, the brokerage sends a *netted order* via Fundserv to the mutual fund, showing the combined effect of all orders for all customers of this one brokerage. The broker may elect to send each order individually, or multiple groups.

4. The mutual fund collects the many orders from the brokerage, and confirms them as they come in [Rejects].

5. Around midday, on the next day, the mutual fund aggregates all orders, and calculates a net redemption / growth position. This is addressed by drawing down or increasing the cash subaccount within the total portfolio [Adjust].

6. The mutual fund calculates the daily NAV based on the value of the portfolio and the number of shares in existence. This then forms the price for all of the trades in the next 24 hour period.

Most brokerages and other intermediaries maintain omnibus accounts [Int]. These accounts aggregate all the orders and assets of their customers, rather than using the subaccounting features that may be available via the mutual fund's transfer agent [Sub].

When does the Customer's Subaccount Change?

What is missing in the above scenario is the step of transferring the purchased mutual funds into the subaccount of the customer. In theory, this should happen before 4pm, on the day following the order placement, as confirmed and accepted by the mutual fund.

In practice, it can happen, and does generally happen, before that time. That is, the broker transfers new units into the customer's subaccount according to some local convenience, and plausibly as early as the moment when the order was originally placed.

Herein lies a core flaw in the system - the broker can create and destroy apparent units of shares of a mutual fund. In fact, the broker's accounts are totally separate from the mutual funds' accounts; the loop between new trades being accepted at the mutual fund, and shares being moved into and out of brokerages' subaccounts is never closed.

What this means is that there is no necessary connection between the brokerage accounts and the mutual fund issuance accounts. In fact, there is no necessary connection between the brokerage's omnibus account and own subaccounts. In effect, in accounting terms, any given issue is run over a series of single-entry books, spread over multiple administration entities, and linked by manual procedures.

In the industry parlance, shares in mutual funds are not *perfected* [SIPC]. The real positions of brokers and of funds then rely on reconciliation of omnibus accounts, subaccounts, error accounts, orders, and mutual fund accounts, a step which rarely completes. The normal situation is that at any given moment, there is no accurate figure for the number of shares in existence.

What Abuses can Occur Inside the Fund?

Neither is the cash position necessarily related to units of shares. Mutual funds can at their discretion, take late orders to buy up to a week after the trade date. If labelled as lost, or delayed, there is no difficulty for the fund itself, as the cash is good as long as it turns up into the cash account.

A lost order is originally an honest favour to an intermediary, but it may eventually be turned into an abuse. A lost order may once have been lost, or it may be a winning trade for an insider's accomplice. As the mutual fund's NAV is never recalculated, nor are is its correspondence closely audited, this practice of lost orders is essentially never re-examined for fraudulent motives.

What is perhaps more poignant is that it points to the flexibility of the book keeping system within the mutual fund - something that to date has not received much attention.

What Abuses can Occur Outside the Fund?

A mundane abuse is for the broker to place two orders, one to buy, and one to sell, shortly before the 4pm close. Then, as the market timing information comes in, the broker cancels the "bad" order. According to Fundserv trading rules that require error correction to be accepted, the mutual fund has no choice but to accept the cancellation up until 11.30am or so the next day.

This gives the broker a *late trade* - the perfect arbitrage. As long as the trades can be hidden amongst customer orders, there is no way the mutual fund can defend against this practice, as it cannot see through the orders to detect the pattern. Indeed, as the fund has effectively *outsourced compliance* of customer actions to the brokerage, it may not even see the need.

A further abuse is created by the lack of trails as to what constitutes a real order. Not only can the broker cancel an order up until the internal close time, a "lost order" can be sent in well past that time, as described above, to create a winning order.

More egregious still is *cherry picking*: take a customer's winning order, transfer it to the subaccount of the broker, and tell the customer that an error was made, and only the next day's price is available. The rules say that the brokerage has to make good on the deal, but the insider cares not whether the customer is made good under the rule, or not.

A more blatant abuse is to create differences between the subaccounts and the omnibus accounts, or between the omnibus accounts and the mutual funds accounts. This can lead to simply borrowing of created assets, or even to outright theft.

Why are there so many abuses? One reason is that mutual funds are not *tradeable* in the ordinary daily sense. As the NAV is fixed on a daily basis, the product is a simple pass-through from mutual fund to customer. Hence, there is no profit center charged with making money on the daily movements of these instruments, as there is with other instruments. And, therefore, there is no individual responsible for the

profits and losses, and they get buried in the corporate balance sheet.

It is, perhaps, for all these reasons that industry insiders find the current attention on mutual funds somewhat mystifying. Given the difficulty in reconciling basic positions, and separating out errors from frauds, a little late trading is only the beginning of the issues.

Moving to Real Time Gross Settlement

During the entire time from customer order to completion, there is such latitude for abuses that it is difficult, and probably meaningless, to be comprehensive. What is more important is to point at the issue of delayed settlement as the root cause of abuse.

Only by eliminating delays in settlement will abuses disappear.

III. Conclusion

III.a Governance

We have above developed the case of how the mutual funds came to be so abused at the expense of their shareholders. In summary, the settlement system leaves open plenty of scope for abuse. And, the lack of effective governance allowed that abuse to develop in its own time.

We propose very strongly that one way to address this failure is to employ real time gross settlement in order to remove the temptation. The failure of governance is less easy to deal with.

The above descriptions do not fully address the complex interplay behind the failure, as they ignore the source of the governance decisions. In order to go further, we need to look at the regulatory environment.

Why did it Work at First?

Congress did not put in place a failed system in 1934, and the SEC did not approve measures that were fruitless from day one. Today's situation had its genesis in earlier, viable days of honest trading.

It is an article of faith in the securities industry that the clerks and managers doing the floor work and back office work are basically honest. The systems work when the people are trusted.

And, the people are trustworthy, and reliably so, when they are working together, as there exist informal systems in place - reputation, loyalty, honour - to keep people working together for the benefit of the customers.

Where these systems break down is when the complexities force them apart. Several factors have arisen over the decades to change the makeup of the securities industry so as to reduce or break the assumption of trust in dealings. Some of these factors are:

- Size. The financial industry today is immense, far larger than the writers of rules considered in 1934. The acute difference is that it is no longer necessary to worry about one's own name being soiled, as the field is too big for word of any ordinary delitos to spread far afield.

- Litigation. It is practically impossible for a firm to deliver a poor reference to an employee, due to the potential for suits.

- Exposure. Firms' reputations are subject to much more scrutiny in these days of the Internet. It is no longer easy to suppress the news of a fraud, and, at the same time, punish the perpetrator.

- Prosecutions (I). Real frauds are prosecuted, but so many of the results end up as *Offers of Settlement*, agreed and drawn up before a judge. As these effectively ban the alleged perpetrator from the industry, with no finding of guilt, and as the money is rarely recovered, it is unclear whether these results are punishments or get out of jail free cards.

- Prosecutions (II). Those that do take a higher profile, such as those of Michael Milken, and today, Martha Stewart, are often perceived to be, rightly or wrongly, the actions of a jealous bureaucracy.

It is under these circumstances, that, regardless of the unquestionable honesty and integrity of the vast majority of clerks and managers in the securities industry, we must suggest that the field itself cannot rely on that trust, and that the securities industry as a whole should not be considered to be trustworthy.

How Regulation Misses the Target

Competition works to improve products. In contrast, regulations work to improve safety, by creating standards and lifting the game of poor players.

Unfortunately the approach of financial regulation often suffers from the *law of unforeseen circumstances*. This so-called truism often leads to the reverse of expectations arising. Here, we touch on some reversals that are particularly detrimental to the securities industry.

Regulations create standards to improve safety of poorer players, but they also inevitably work to lower the achievement of other, stronger players, as under a standardised and regulated environment, there is no reward for being better than the average. Thus, regulations work against competition to homogenise products to the lowest common denominator.

Further, each successive scandal results in a wave of new regulations. As each set of changes comes through, the business environment becomes ever more complex. Outsiders naively conclude that the regulations are so complex that no fraud is possible, but, generally, the reverse is true.

The more complex the regulations, the more space there is to hide fraud. More systems means more gaps, and more people means more departments, which leads to less scrutiny. Separation of roles can be employed happily to protect assets, or to protect secrets. It is no surprise that auditors are powerless to see frauds, as simply understanding the regulations that drive the structures is a full time job.

Even worse, as systems become more complex, the tendency to outsource increases. This means that what was once a simple local, internal governance issue suddenly becomes a contractual, commercial, and competitive issue. Mutual funds show how much potential for fraud derives from the tendency to outsource the subaccounting to intermediaries; what is not realised is that the pressure to outsource comes directly from increased regulations. Thus, the increased burden of regulation carries much of the blame for the increase in potential for fraud.

Finally, regulation tends to take a simplistic view towards scrutiny, that of adding more watchers. The current call for action to add more board members, and in some unexplained sense, to make them more responsible, is indicative of this trend. Yet, if there is one thing that has been learned from recent times, and recent events, it is that all watchers, however appointed and charged, in some way or another, can eventually be subverted.

An Example of Competitive Success

It is perhaps easy to dismiss efforts by unregulated and informal issuers of digital gold currencies. At the time of this writing, DGCs have less than a mere $50 million under management.

It is, however, far less easy to dismiss the effect of this as competition on the financial world. As the DGCs crossed over the periods of start-up uncertainty into stability and profitability, more conservative players took note. They copied the open governance model of the DGCs, and issued *exchange traded gold-denominated instruments* [ETF].

When these innovations entered the market, they built on the small successes of the DGC market by combining the security of strong, open governance with the depth of regulated markets. There is no doubt that gold-denominated ETFs are a big success, as, at the time of writing, total value placed under management after no more than 12 months is around $785 million.

Not only is this success a market endorsement of the DGCs' model of open governance, it is also an accusation by investors levelled at the financial industry and the banks, and the "trust us" level of governance that was previously offered.

An Example of Regulatory Failure

Since the early 1990s, FundServ has been offering a late morning close time for order entry, as approved by the Securities and Exchange Commission. Clearly, the question arises of why the window is so late, thus permitting so much late trading opportunity.

The industry draws attention to the the plight of the third party administrators ("TPAs") of qualified plans such as ERISA. Mutual funds wish to market their products directly to these TPAs, without being forced to have their product channelled through the competitive intermediaries.

Yet, the TPAs are also encumbered by much of the regulations that apply to brokers, without the size and automation to deal with the needs of submitting orders in a timely manner. To compensate for the slowness of the TPAs, FundServ offers a late closing time, up to 11.30am the following day.

Once offered to one, the standard must be offered to all, which allows other adroit and well-capitalised intermediaries to manipulate the system.

In this way, regulations designed to suit the lowest common denominator, for entirely fair and benign reasons, create the loophole that has led to so much fraud within the mutual fund industry.

III.b Solutions

We offer the following proposals.

Real Time Gross Settlement

An essential component of any solution is to move the mutual funds sector over to real time gross settlement of all transactions. Once it is possible to convert and trade incoming payments into shares in funds on an immediate basis, there is no longer any sense in market timing and late trading. If every share holder gets access to their shares instantly their payment is acceptable, then the time delays that represent opportunities for abuse disappear.

Real time gross settled payments, share transfers and trades are demonstrable and effective. They could be employed by mutual funds advisory firms in short order.

Yet, the securities industry is unlikely to move to RTGS except under massive pressure from outside the industry. For this reason, competition is likely the only enabler of change. As outside influences create the pressure for change, slowly, the innovations available outside the securities industry will trickle in.

Regulatory Strategy

Regulators should no longer rely on an assumption of cultural honesty. The world of finance has become too anonymous - the US trading system is too big and complex to permit honesty to play a reliable part.

As the financial systems get more and more complex, there is only one watcher that can keep up and make an intelligent decision as to the integrity and safety of an investment offering.

That watcher is the public.

For this reason, we propose that the SEC and other regulators shift gears. Instead of promoting their mission of *protecting the investor* by means of litigation after the event, regulators should promote a cult of *caveat emptor*.

Rules that seek to place insiders in closed and confidential control of assets should be eschewed in favour of rules that permit but not mandate the opening up of balance sheets and structures.

Transparency

The SEC should promote transparency. Not in the popular industry sense of lip service, but by permitting firms to experiment and work with shareholders to expose the internal governance information.

The SEC, in line with its mission of protecting the investor, already does this. It was not the SEC that blew the whistle on Enron, it was a member of the public. But, it was the SEC that mandated all the filings that the individual used to reverse-engineer the frauds.

We simply propose that the SEC take the wraps of this secret reality. It’s time for investors to understand that they, and only they, can protect themselves.

Litigation

The cases launched by the Attorney General of New York State, in the pursuit of wrongdoing in the mutual fund industry, have had a curious, if predictable side-effect. Civil litigation has now embroiled many firms in complaints by classes of wronged investors. In comparison, the efforts of the SEC and of the State Attorneys General, may become mere footnotes in financial history.

It is sometimes unclear whether the efforts to prosecute by the SEC or the Attorneys General have resulted in punishment or not. However, it may well be that their time is better spent in establishing the evidentiary strength of any case, for the parties better able to pursue their claims, being the classes of wronged investors.

Internet

In closing, it is clear that the securities industry needs systems that can operate in an environment of no trust. The Internet thrives in this environment. We recommend that investors be assisted wherever possible to access their assets, directly and conveniently, over the Internet.

On the net, all traders are equal. Open governance lets traders defend and celebrate their equality, and the way should be opened for more of it.

References

[FC7] Financial Cryptography in 7 Layers, Ian Grigg, Proceedings of the 4th Conference in Financial Cryptography.

[Firms] Because of the sensitivity of the present scandal, we have omitted references to firms.

[5PM] This arrangement is known as the five parties model ("5PM"). It consists of dividing activity between five separate parties, being Issuer, Manager, Co-signatory/Mint, Repository/Operator, and Public.

[Float] For example, the operator of the digital subaccounting system can theoretically create new value, but that task is taken from him. Instead, the independent external Mint role is tasked with all new float, leaving the Operator with a limited Internet server role.

[Bars] For example, one company publishes the bars list provided by the repository on a quarterly basis. Another publishes a dynamic list of bar numbers, which it updates with every new bar movement.

[Rejects] Of course, a small percentage might be rejected, but we ignore that here.

[Adjust] At some unrelated point, the portfolio is adjusted over time to meet the investment goals, thus taking into account changes share purchases and sales.

[Int] Intermediaries include brokerages, hedge funds, third party administrators, and banks. In the text, when we refer to brokerages, we include all types of intermediaries.

[Sub] The reason for using own-subaccounting is two-fold. Firstly, the systems employed by the brokerages cannot deal with automatically coordinating the mutual funds' subaccounts with their own subaccounts (such would necessitate a capital expenditure). Secondly, mutual fund subaccounts would include the details of the customers, exposing the brokerage to theft of client base by the mutual fund. This effect is significant - several very large mutual fund families have grown by using the customer base of brokerages.

[SIPC] If mutual funds were traded under SIPC rules, each share would need to be perfected by some means. For example, the mutual funds could maintain a single accounting system at a centralised party, which permit each brokerage to foot off that account.

[ETF] Exchange traded funds denominated in units of gold now exist on the London Stock Exchange, the Australian Stock Exchange, the Toronto Stock Exchange, and the American Stock Exchange.