CCOutreach National Seminar
Forensic Measures for Funds and Advisers
November 14, 2007

This document, prepared by the staff of the Office of Compliance Inspections and Examinations, is intended to provide investment company and investment adviser Chief Compliance Officers with examples of forensic testing measures that may be used to assess compliance in various areas. "Forensic" tests are transactional or quality control tests that may assist in determining whether firms' activities are consistent with their compliance policies and procedures.

Many of these forensic measures are used by examination staff during inspections and have also been discussed in previous *CCOutreach* programs. While none of these forensic measures are required, they may be useful to consider when CCOs are evaluating the effectiveness of their firms' compliance programs.

There are a large number of such forensic tests that provide extremely useful information about the activities of funds and advisers (this list is not exhaustive!). Many of these tests can be readily performed and results analyzed by both compliance staff and examiners. For some of these measures, the necessary data are already present in the books and records that funds and advisers are required to keep. To perform other forensic tests, additional data would need to be captured and maintained.

Examples of some of the forensic tests currently used by examiners are provided in the following strategic risk areas, which are often the focus of our examinations:

- *Portfolio Management and Trade Allocation;*
- *Brokerage Arrangements and Execution;*
- *Valuation;*
- *Personal Trading;*
- *Safety of Client Assets; and*
- *Marketing and Performance Advertisements.*

We hope you find these forensic tests helpful and applicable to your compliance program.

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Portfolio Management and Trade Allocation

➢ **Performance disparities among client accounts.**

- o Compare performance among client accounts managed under similar investment styles (e.g., large cap growth, international value, etc.) for undisclosed favoritism toward certain clients. Identify accounts with performance of two or more standard deviations, both plus and minus, away from the mean performance of accounts managed under a particular investment style. Reasons for aberrant performance may be due to client restrictions or large cash flows, but may also be due to undisclosed favoritism toward certain accounts.

- o Compare the performance of all accounts that were eligible to participate in initial public offerings ("IPOs") over various periods such as one and two years. Accounts whose performance is significantly higher than the average for this group of clients should be analyzed closely to determine if a reason for the unusual performance is the allocations of IPOs that were given to these accounts.

➢ **Percentage of profitable trades in accounts.**

- o Calculate the number of profitable trades in each client's account over the previous 12 months and the average number of such trades for all clients. Identify those clients' accounts that have much better results than the average and determine the reason for such results.

➢ **Window dressing and portfolio pumping.**

- o Compare portfolio turnover at the end of several reporting periods in comparison to portfolio turnover during longer periods to identify patterns of activity that could demonstrate the intent to pump the portfolio (i.e., manipulate trading to boost performance at the end of a period) or to window dress (i.e., improve the appearance of the portfolio or its performance before it is reported to clients or fund shareholders). Compute portfolio turnover rates for the five or ten days before and after quarter ends for a two or three-year period and compare these short-period turnover rates, both individually and on average, to the portfolio turnover for the account or fund for one year periods.

➢ **Cherry picking to benefit favored clients.**

- o Compare performance among client accounts managed under similar investment styles over a one or two year period. Identify accounts whose performance is significantly higher than the average of all accounts in a style. Review trading in such accounts to determine if a reason for the unusual performance is due to the unfair or fraudulent allocation of trades. For example, check to see if a trade

intended for one client was diverted to the account of another client by changing the allocation or settlement instructions given to the executing broker.

Brokerage Arrangements and Execution

➢ **Average commission rates paid to broker-dealers.**

o Compute the average commission rates paid to broker-dealers used during a period to identify brokers with whom the adviser may have undisclosed conflicts of interest.

➢ **Average commission rates paid by advisory clients.**

o Calculate the average commission rates paid by various advisory clients and compare the individual client averages to the average commission rate paid by all clients. Identify significant disparities among clients and identify clients that have been referred or have directed brokerage arrangements, which may result in these clients paying different (often higher) commission rates than other clients of the adviser or getting less effective executions.

➢ **Total commission paid to broker-dealers.**

o Calculate the total commissions paid to each broker-dealer used during a period to identify brokers with whom the adviser has a significant relationship. This forensic measure may show the relative importance of each broker-dealer with whom an adviser maintains an arrangement and may reveal undisclosed conflicts of interest.

➢ **Patterns in trade errors.**

o Select accounts in which trade errors have occurred for a sample period and review the entries to make sure errors have been corrected promptly.

o Identify any concentrations of errors by a single broker-dealer. Follow-up on any efforts to get the broker to reduce its error rate and to ensure that there are no undisclosed conflicts of interest.

Valuation

➢ **Pricing of securities.**

   o Review the pricing of securities prior to the sale date. Compare selling prices to the price used the previous day or to prices used over the previous several days.

   o Review portfolios for static prices (i.e., positions that have had the same value for a significant period.

➢ **Differences between selling prices and fair values.**

   o Compare fair values with selling prices to evaluate the accuracy of fair value pricing procedures.

   o Compare prices realized upon the sale of securities with the valuation applied to those securities at their most recent valuation dates. Aggregate the results of these individual tests across longer periods and use market factors to test the efficacy of fair value pricing processes. Evaluate results to determine if fair value pricing processes produce systemic overvaluations.

➢ **Fund shareholder turnover.**

   o Review fund shareholder turnover to evaluate the accuracy of a fund's portfolio pricing policies. High turnover may indicate that investors believe that the prices the fund uses to value its assets are frequently inaccurate or stale and allow room for arbitrage against its NAVs that are calculated using such stale values.

   o Divide the lesser of gross fund share purchase or redemptions during a period (six months or a year) by the average net assets of the fund during the period and compare the results of this calculation to industry norms for that type of fund.

   o Evaluate dilution/accretion from excessive shareholder turnover to vet the accuracy of a fund's portfolio pricing policies. Dilution occurs when incoming investors purchase fund shares at an NAV that is too low or outgoing shareholders redeem their shares at an NAV that is too high as a result of the fund using stale prices to value its assets. Conversely, accretion occurs if investors purchase at too high an NAV or redeem at too low an NAV.

➢ **Large percentage changes in per share NAV.**

   o Review any large percentage changes in per share NAV to vet the accuracy of the process used to calculate NAV and find deliberate mis-valuation.

➢ **NAV errors.**

    o Evaluate errors to vet the accuracy of a fund's NAV calculation process. Review remedial actions taken, including those that involved making the shareholder whole.

Personal Trading

➢ **Review of access persons' trades.**

    o Consider including proprietary and other related trades in the adviser's electronic trading system, allowing for electronic tracking of access persons' trades.

    o Systematically compare personal trading to any restricted lists.

    o Periodically analyze access persons' trading for patterns that may indicate abuse, such as consistently trading ahead of client accounts.

    o Review client files of affiliated persons for any unreported brokerage accounts.

➢ **Performance disparities among clients and accounts of insiders.**

    o Calculate one and three year average annual total returns for every proprietary account of the adviser and every account of an access person. Compare the returns on these accounts to those earned by clients and further analyze any wide discrepancies.

    o Compare performance among client and proprietary accounts managed under similar investment styles over a one or two year period. Identify accounts whose performance is significantly higher than the average of all accounts in a style. Review trading in such accounts to determine if a reason for the unusual performance is due to the unfair or fraudulent allocation of trades. For example, check to see if a trade intended for one client was diverted to a proprietary account or the account of an insider by changing the allocation or settlement instructions given to the executing broker.

➢ **Percentage of profitable trades in accounts.**

    o Calculate the number of profitable trades in each proprietary and access person's account over the previous 12 months and the average number of such trades for these accounts. Compare the number of profitable trades in these propriety/access persons accounts to those in clients' accounts and if there are significant discrepancies, determine the reason.

Safety of Client Assets

➢ **Third-party custodian statements and book reconciliations.**

- o Review periodic reconciliation of client account statements to look for patterns among the reconciling items used over a period of time such as six months or a year to balance the positions shown by custodians to those shown on the adviser's books.

- o Identify any reconciling items that consistently appear from one reconciliation to the next. These items may indicate a misuse or misappropriation of client assets. Alternatively, they may indicate sloppy recordkeeping that could result in misuse or misappropriation of client assets.

Marketing and Performance Advertisements

➢ **Performance composites used in marketing materials.**

- o Periodically review client account holdings for an account's appropriateness to a composite, including sector and security concentrations.

- o Compare client account asset levels to composite asset minimums.

- o Review accounts that are excluded from composites to ensure that reasons for the exclusion are adequate and documented.

- o Periodically review composite disclosures to ensure the information reported is accurate.

➢ **Recordkeeping related to marketing and performance advertisements.**

- o Periodically test recordkeeping practices to ensure that all documents necessary to substantiate advertised performance are being appropriately created and retained.

➢ **Claims of compliance with Global Investment Performance Standards (GIPS) or other ethical standards.**

- o Review claims of compliance with GIPS standards for accuracy. An inaccurate claim of compliance in advertisements and other correspondence could constitute a false and misleading statement under Rule 206(4)-1(a)(5).

➢ **Responses to requests for proposals and consultant questionnaires.**

o Periodically review responses to ensure the information reported is truthful and not misleading.

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