ICI MUTUAL **RISK MANAGEMENT STUDY**

Understanding Bond Fund Risks

A Study of the Unique Legal Liability Risks of Bond Funds and How to Manage Them

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Introduction and Executive Summary

From an investor perspective, bond funds[1] are traditionally regarded as relatively safe investments. Frequently characterized as an "anchor to windward," financial professionals and the popular press often recommend that investors use bond funds for the more conservative portion of their portfolios.[2] Bond funds are especially attractive to risk averse investors, such as retirees seeking steady income and investors looking to "tame the volatility of an equity portfolio" through diversification.[3]

By contrast, when viewed from the perspective of the legal liabilities they may create for fund complexes, bond funds are relatively riskier than other types of funds and have generated legal liabilities that are grossly disproportionate to their presence in the industry. Since the late 1980s, private litigation and regulatory actions relating to bond funds have triggered more than a score of multi-million dollar legal liability losses, with many exceeding $10 million and at least two exceeding $90 million.[4] Indeed, while bond funds (exclusive of money market funds) comprise approximately 19% of fund assets insured by ICI Mutual Insurance Company, a Risk Retention Group ("ICI Mutual"), they account for over 50% of all amounts paid by ICI Mutual over the past fourteen years (ICI Mutual insures approximately 70% of the industry's assets). Public reports suggest that bond funds also have triggered significant and disproportionate legal liability losses during this period for fund complexes not insured by ICI Mutual. Furthermore, complexes have sustained additional millions of dollars in business disruption and other costs in defending legal proceedings and in implementing remedial procedures. In some cases, the reputational damage has cost complexes significant existing and new business, particularly with institutional clients.

This comparison raises an obvious question — if bond funds are traditionally viewed as a relatively safe investment for investors, why is it that they seem to create heightened legal liability risks for fund complexes (and their investment advisers and their associated directors and officers)? While such a complicated question does not lend itself to an easy answer, the data suggests that certain underlying features of bond funds and bond fund management give rise to unique legal liability risks — i.e., liability risks that, in kind and/or degree, are unlike those faced by mutual funds as a whole. A review of losses suggests that they are more likely to occur when complexes do not understand fully or appreciate the nature and potential severity of the unique legal liability risks of bond funds.

ICI Mutual's 2001 study on Investment Management Compliance Risks reviewed the most significant liability risks common to all types of mutual funds and described mechanisms that complexes use in managing these risks.[5] By contrast, this Study is designed to assist complexes in addressing the unique legal liability risks raised by bond funds. In particular, this Study is designed to assist management, portfolio managers, and legal and compliance personnel in:

- Appreciating the nature and potential severity of legal liabilities associated with bond funds;
- Understanding the features of bond funds and bond fund management that appear to give rise to these unique legal liability risks; and
- Implementing risk management techniques — tailored to each complex's needs — designed to manage these unique risks.

This Study is not intended to and does not suggest any single approach or set of "best practices" for use by complexes in addressing the unique legal liability risks of bond funds. Given the diversity of bond funds and fund complexes, it is not practical or advisable to seek a "one size fits all" standard for behavior in this area. The most appropriate system for a particular complex's oversight and management of the legal liability risks of bond funds will depend on factors specific to that complex, including its bond fund strategy, marketing practices, and oversight philosophy and practices. Indeed, the Study suggests that while the legal liability risks that complexes face with bond funds are generally similar, how individual complexes may wish to seek to manage these risks may vary substantially based on each complex's history, development, and culture.

The observations in this Study are derived from ICI Mutual's detailed interviews with selected insured complexes, from analysis of bond fund losses reported by insured complexes (many of which are not a matter of public record), and from a review of publicly-reported losses by non-insured complexes.[6] The Study is divided into three sections:

Understanding the Unique Legal Liability Risks of Bond Funds: The data suggests that four features of bond funds and bond fund management underlie the unique legal liability risks they raise. This Section explores these features and how they may contribute to these risks. Appropriate understanding and consideration of these features by management, portfolio managers, and legal and compliance personnel is crucial in managing and overseeing these legal liability risks.

Three Common Themes in Bond Fund Losses: A review of bond fund losses shows that the great majority have involved one or more of the following themes: (1) use of complicated debt instruments or investment strategies; (2) improper valuation of portfolio securities; and (3) intentional or reckless misconduct by portfolio management personnel that remains undetected by supervisory personnel and compliance systems. This section reviews these three themes, provides illustrative examples of specific losses, and suggests that these themes relate, directly or indirectly, to the four features of bond funds and bond fund management.

Managing the Unique Legal Liability Risks of Bond Funds: This section reviews oversight and management of the unique legal liability risks of bond funds. First it discusses how a complex's business practices may affect the liability risk profile of its bond funds. Then it moves on to discuss issues for consideration by complexes in structuring risk management efforts to address the unique legal liability risks of bond funds, and describes specific techniques used by some complexes in managing these risks.

Understanding Bond Fund Risks

Although bond funds (exclusive of money market funds) comprise approximately 19% of fund assets insured by ICI Mutual, they account for over 50% of all amounts paid by ICI Mutual on insurance claims over the past fourteen years. This Study is designed to assist fund complexes in understanding and managing the unique legal liability risks raised by bond funds.

Understanding the Unique Legal Liability Risks of Bond Funds

From an investment perspective, bond funds are typically viewed as less risky than equity funds.[7] Even the Securities and Exchange Commission ("SEC") appears to agree with this general proposition.[8] From a legal liability perspective, however, the opposite seems true. The loss history of bond funds shows that the legal liabilities attaching to bond funds themselves, their investment advisers, and their associated persons are disproportionate to those of other types of funds.

Interviews with fund complexes and analysis of bond fund losses suggest that four features of bond funds and bond fund management seem to underlie these unique legal liability risks: (1) managing bond funds has become increasingly complicated; (2) bond fund investors seem less accepting of sudden NAV losses; (3) yield-based marketing may encourage riskier conduct; and (4) overseeing bond fund risks raises special challenges for management and compliance personnel. These four features, and how they may increase the unique legal liability risks of bond funds, are discussed below.

Increasingly Complicated

Managing bond funds has become increasingly complicated over the past fifteen years.[9] While newspapers and magazines devote enormous attention to equity funds, there can be little doubt that managing bond funds can now be far more complex than managing equity funds. The following factors, in particular, support this conclusion:

- *Greater Array of Bonds*. While most corporations typically have a single class of common stock, bond issuers frequently issue bonds in a numbing variety of maturities, coupon rates, credit quality, and other special features. The number of individual bond issues is staggering — there are an estimated 400,000 corporate bonds outstanding, 1.8 million issues in the mortgage-backed market, and an additional 1.5 million municipal bond issues.[10] The total capitalization of the bond markets is estimated at more than $17 trillion. By contrast, there are approximately 9,000 equity securities traded on the New York Stock Exchange and NASDAQ combined, with a total market capitalization of about $11 trillion.[11]

- *More Complicated Debt Instruments*. The nature of managing bond funds is such that, when investing, a bond fund portfolio manager must consider not only the traditional risks affecting all types of investments, but also numerous risks unique to managing bond funds, such as credit risk, interest rate risk, prepayment risk, and reinvestment risk (different

bond funds are subject to these risks in different degrees).[12] Moreover, the variety of structures of individual bonds has increased exponentially in recent years,[13] resulting in a vast array of highly complex instruments such as asset-backed securities,[14] bonds with embedded options,[15] collateralized mortgage securities,[16] floating-rate and adjustable-rate notes,[17] inverse floaters,[18] IOs and POs,[19] mortgage pass-through securities, and when-issued securities.[20] Trading in more complex debt instruments is also frequently less transparent than in other types of debt instruments ("transparency" is discussed below).

- *More Complicated Investment Strategies.* Managing bond funds frequently involves more complicated investment strategies than most other types of investing. In addition to the basic investment strategies applicable to all investing, portfolio managers for bond funds must understand sophisticated concepts such as barbelling, convexity, duration, and the yield curve.[21]

- *Less "Transparency."* Unlike the centralized way most equity securities trade, bond trading tends to consist of customized, privately negotiated transactions between the two principals, and the availability of real-time information about trading is frequently limited.[22] Most bonds do not trade on an exchange or other centralized trading venue where current price quotations and last sale information are available. Many bonds trade infrequently (perhaps only once or twice over several months), and many bonds are relatively illiquid.[23] These factors greatly complicate the management of bond funds, including the task of determining a bond's current valuation each day, particularly for more complex and less widely held debt instruments.[24] As a result, bond trading is generally viewed as less "transparent" than equity trading.[25]

The number, variety and complexity of available debt instruments, the sophisticated concepts used in assessing bonds and bond performance, and the relative lack of transparency in the bond market all raise special compliance challenges. These challenges arise not only for portfolio managers, but also for legal and compliance personnel and for managers charged with oversight of the investment process. Simply put, compared to other types of investing, bond fund management creates additional — and frequently arcane — areas where potential problems can arise, and more potential problems can result in more potential legal liabilities.

Investors Less Accepting of Sudden NAV Declines

Notwithstanding the increasing complexity of bond fund management, and the risk disclosure typically included in bond fund prospectuses and other investor communications, investors seem to continue to perceive bond funds as relatively "safe," conservative investments.[26] Many commentators have noted that the investing public appears to remain relatively unsophisticated about bond fund risks, particularly regarding the potential for investors to lose principal.[27] Given this reality, it is perhaps understandable that, as even the SEC has noted, investors "frequently express surprise" when bond funds suffer more than a minor net asset value ("NAV") loss.[28] Indeed, sudden NAV declines beyond a relatively narrow range[29] almost invariably trigger investor class action lawsuits (and/or regulatory investigations). An NAV loss of less than 10% has triggered legal action; one SEC action related to an NAV loss of only 1.3%. By contrast, numerous equity funds have in recent years suffered far more

substantial NAV declines, yet these losses have not produced widespread private litigation or regulatory actions.

Certainly, fund complexes are not guarantors of investment performance, and poor performance by a bond fund, standing alone, should not be a basis for successful litigation or regulatory actions against a fund complex.[30] The fact remains, however, that sudden NAV losses of any significant size by bond funds frequently result in legal liability losses for fund complexes, typically as a result of litigation based on theories of inadequate disclosure. Because the federal securities laws impose significant liability for inadequate disclosure, and disclosure claims frequently reflect more subjective issues (such as the adequacy of a fund's risk disclosure), these claims are typically most threatening to a complex.[31] The plaintiffs' securities bar is active and skillful, and substantial recoveries can be achieved if an investor class action lawsuit can survive pre-trial legal challenges (very few class action lawsuits ultimately proceed to trial).[32] If class action lawsuits, even relatively weak ones, survive pre-trial challenges, defendant fund complexes often find the certainty of multi-million dollar settlements preferable to the uncertain outcome of a trial. (Similarly, most regulatory actions are ultimately settled, and fund complexes frequently find the certainty of settlements preferable to the uncertainty, and accompanying publicity, of a prolonged administrative proceeding.) At the very least, fund complexes should expect to incur substantial legal fees (frequently in the seven-figure range) and business disruption costs in defending private litigation and/or regulatory investigations and proceedings.

Yield-Based Marketing/ Riskier Conduct

Like most mutual funds, bond funds are marketed to retail investors based primarily on investment performance.[33] For equity funds, most marketing is based on a fund's "total return." Total return is a measure that includes all elements of performance (i.e., income, capital gains distributions, and NAV changes) and is generally viewed as the most comprehensive performance measure. By contrast, since many bond fund investors are most interested in current income, marketing for many bond funds, particularly retail funds, focuses on current "yield,"[34] which measures only the income component of a fund's performance.[35] Some complexes compete vigorously to have bond funds that are higher yielding — if not the highest yielding — in their peer group,[36] since a yield increase of just a few basis points can often transform an average bond fund into one that is top yielding. Income-seeking bond fund investors (such as retirees) will frequently "reward" such a fund with additional assets.

The oft-cited axiom that higher returns are only available by assuming higher risks applies equally to yield, and relatively higher yielding bond funds invariably involve greater interest rate, credit, or other risks. (Most bond fund losses have not involved relatively lower yielding funds.)[37] Understandably, yield-based marketing encourages portfolio managers to seek out investments that enhance yield. In response to this need, Wall Street has created, and continues to create, many types of debt instruments, particularly derivatives, that can enhance yield.[38] As new and complex instruments are introduced, however, it may take some time before they are fully understood by portfolio managers (or indeed, any experts) and the instruments

may not perform in the manner anticipated, particularly in times of market stress.[39]

Furthermore, the "pressure to perform" on portfolio managers can create additional incentives to experiment with new types of investments. "Pressure to perform," and direct or indirect pressure from management or marketing personnel, also may in some cases encourage imprudent conduct.[40] Although equity fund portfolio managers are susceptible to the same kinds of pressures, the more commodity-like nature of bond funds may leave them particularly susceptible to this risk.[41]

Overseeing Bond Funds Raises Special Challenges

Overseeing bond fund risks raises special challenges for management and compliance personnel. The complexities of bond funds and bond fund management can present difficult (and sometimes arcane) issues that are unlike those raised by other types of funds. In many cases, these issues may not be intuitive and can be difficult to understand and master, particularly for those legal and compliance personnel who have other responsibilities and who do not work with these concepts on a daily basis.

Further complicating the challenges faced by management and compliance personnel is the fact that the accounting data typically used to identify and monitor risk for other types of funds may not be adequate for bond funds. Many accounting systems do not provide the "full picture" on risk, as they are not usually designed to capture and make available data relating to the unique legal liability risks of bond funds and bond fund management. For example, while accounting systems typically capture data adequate to monitor the risk of equity funds, these systems are not designed to capture data about matters such as duration, average maturity, or the risks of bonds with embedded options. Therefore, in overseeing bond funds, management and compliance personnel may be more dependent on portfolio management personnel for basic compliance data and, more importantly, for understanding how that data should be interpreted. This reliance necessarily complicates oversight and may make it more difficult to identify imprudent conduct or misconduct by unscrupulous individuals.

Because of their complexity, and misperceptions about the nature and extent of their associated legal liability risks, bond funds may not receive the same degree of attention from senior management and legal and compliance personnel as other funds, particularly equity funds. The relatively less profitable nature of bond funds as compared to equity funds generally also may contribute to this situation. This concern may be a more significant one at complexes that offer both equity and bond funds, particularly where the equity funds dominate a complex's business. In this regard, it is noteworthy that a substantial number of the losses discussed in this Study occurred at complexes that offer both equity and bond funds.

Three Common Themes in Bond Fund Losses

Since the late 1980s, fund complexes have sustained more than a score of multi-million dollar legal liability losses from their bond funds. Many of these losses have exceeded $10 million, with at least two exceeding $90 million. A review of these losses shows that the great majority have involved one or more of the following types of activities: (1) use of complicated debt instruments or investment strategies; (2) improper

valuation of portfolio securities; and (3) intentional or reckless misconduct by portfolio management personnel that remains undetected by supervisory personnel and compliance systems. The review also suggests that these three themes in bond fund losses relate, directly or indirectly, to the features of bond funds and bond fund management discussed above. As discussed below, in some cases the correlation between these features and specific losses is apparent, while in others the linkage is less direct.

Complicated Instruments and Strategies

The use of complicated debt instruments and investment strategies is a recurring theme in bond fund losses. The fact that many of these losses contain no indication of deliberate misconduct on the part of portfolio management personnel suggests that some complexes may have used these instruments or strategies without fully understanding and appreciating their risks, particularly in times of market stress.

COMPLICATED DEBT INSTRUMENTS

Bond funds have sustained severe losses from the use of more complex debt instruments, particularly instruments such as asset-backed securities, derivatives, high-yield securities, and mortgage-backed securities. In fact, use of complicated debt instruments is found in the most significant losses suffered by bond funds (with the associated lawsuits typically challenging the adequacy of the fund's risk disclosure, and with some challenging marketing practices). Frequently, these more complex instruments are designed to boost yield, and their sensitivity to general interest rates is much higher than that of other debt instruments.[42] Furthermore, since these instruments are not likely to have a long-term trading history, portfolio managers are more dependent on "backtesting" and other hypothetical analysis, rather than "real world" data, in evaluating how these newer instruments will perform under different market conditions. For example, the dramatic increase in interest rates during 1993 – 1994 produced many significant legal liability losses at bond funds that had invested in relatively new types of mortgage-backed securities that performed poorly during this period.

Specific examples of these losses include:

- *Mortgage Securities*. A short-term government income fund allegedly invested in certain IO and PO mortgage securities that were not consistent with the fund's investment objective and that were contrary to disclosure in its prospectus. ***Loss to Complex: More than $33 million.*** [43]

- *Foreign Debt Instruments*. Two global income funds that suffered significant NAV declines following a currency devaluation allegedly misrepresented the risk of investing in the funds, which were marketed as "conservative" and directed at conservative investors. ***Loss to Complex: More than $5 million.***

- *Inverse Floaters*. High-yield bond funds that invested heavily in volatile CMO inverse floaters were allegedly inappropriately marketed to conservative investors in prospectuses and sales materials as safe, stable investments. ***Loss to Complex: More than $3 million.***

COMPLICATED INVESTMENT STRATEGIES

Bond funds also have sustained severe legal liability losses from the use of complicated investment strategies, particularly strategies involving derivatives or currency hedging. These more esoteric strategies have been at issue in more than half of the multi-million dollar bond fund losses surveyed for the Study.

Frequently these strategies involve the use of complicated debt instruments.

Examples of these losses include:

- *Derivatives Strategies*. A short-term government bond fund's CMO derivatives strategy allegedly caused the fund to violate its investment objective and the fund allegedly failed to disclose the deviation from its objective or to obtain shareholder approval for it. ***Loss to Complex: More than $90 million.***

- *Derivatives Strategies*. Two short-term income funds allegedly made inadequate disclosure in prospectuses and sales materials about risks, including risks of strategies involving derivatives. ***Loss to Complex: More than $90 million.***

- *Currency Hedging Strategies*. A government income fund that suffered a significant NAV decline following a currency devaluation allegedly misrepresented its hedging strategy and the availability of hedging devices. ***Loss to Complex: More than $9 million.***

Improper Valuation

Improper valuation of portfolio securities is the second recurring theme in bond fund losses. Shares of open-end mutual funds are continuously bought and sold, so it is critical that funds accurately value their portfolio securities each day. However, valuing portfolio securities is hardly a mechanical function; it involves many subjective factors and judgments and is widely recognized as "more art than science."[44] Not surprisingly, most valuation-based legal liability losses involve complicated debt instruments that may be inherently less liquid or that become less liquid during times of market stress, such as high-yield or mortgage-backed securities. In many cases, but not always, valuation-based losses involve intentional misconduct by portfolio management personnel.

Examples of these losses include:

- *Valuation of High-Yield Bonds*. A fund complex allegedly used misleading prospectuses and sales literature regarding the risks of the complex's high-yield municipal bond funds and the valuation of the funds' portfolio securities. ***Loss to Complex: More than $14 million.***

- *Valuation of Mortgage Securities*. A mortgage fund carried certain CMOs (PAC-IOs) at inflated values. A portfolio manager allegedly obtained inflated valuations from broker-dealers, who allegedly knowingly aided the portfolio manager in the scheme. ***Loss to Complex: More than $3 million.***

- *Valuation of Floating Rate Securities*. Several class actions have been filed against floating rate funds alleging that they incorrectly valued certain loan interests. The claims assert that the funds should not have used fair value pricing when prices were allegedly available from a third-party pricing service. ***Losses to Complexes: Pending.***

Intentional Misconduct

The investment management industry has been relatively scandal-free. While no complex likes to consider the possibility of intentional misconduct by trusted employees, the data shows that bond funds are susceptible to losses from intentional or reckless misconduct by persons in positions of significant authority. This misbehavior rarely involves direct misappropriation of funds. Rather, the industry's loss history in this regard suggests that such individuals — like "rogue traders" in the investment banking and banking industries — are more likely to be motivated

by a desire to maintain their successful management performance, or to enhance their reputation at their fund complexes or the esteem they receive from their colleagues. To some extent, of course, such individuals may act, at least in part, to increase or maintain their compensation levels or to increase their worth in the job market.

Many believe that the less transparent nature of bond investing may be a factor in encouraging or enabling intentional misconduct by unscrupulous persons. In cases of intentional misconduct involving valuation of portfolio securities, for example, losses frequently arise where a fund invests in less liquid securities and the portfolio manager has significant influence in the valuation process. Moreover, the prospect of misconduct remaining undetected may be greater with relatively higher performing funds that, precisely because they are high performing, are viewed as needing less attention from management and compliance personnel. Another recurring pattern in losses from misconduct is a lone portfolio manager or trader who generally operates separate from, or autonomous of, the complex's other investment management functions. (In some cases, but not always, this occurs where bond funds are not the complex's primary focus.) Finally, the less transparent, and more complicated, nature of bond investing obviously raises challenges for management and compliance personnel in seeking to prevent intentional misconduct.

Examples of these losses include:

- *Unauthorized Trading.* A veteran trader, rather than using derivatives to implement a conservative hedging strategy designed to reduce losses in down markets, allegedly engaged in various unauthorized trades for a short-term bond fund and separate accounts. Although his authority to execute the strategy was limited, he allegedly repeatedly ignored these limits and concealed his activities by miscoding order tickets, forging portfolio manager signatures, and, in many instances, by not submitting any order tickets at all. The trader's employer was sanctioned for failing to reasonably supervise the trader and for failing to implement procedures reasonably designed to prevent and detect the trader's activities. ***Loss to Complex: More than $20 million.***

- *Concealed Problems/Inflated Valuations.* A portfolio manager allegedly defrauded a high-yield bond fund and an offshore fund by concealing that issuers of securities held by the funds were suffering severe financial problems and inflating the value of the troubled securities, with assistance from a broker-dealer. ***Loss to Complex: More than $10 million.***

- *Misappropriation of Investment Opportunities.* A portfolio manager responsible for managing registered funds and the complex's private profit-sharing plan caused the funds to purchase certain high-yield securities. He then allegedly diverted to the complex's profit-sharing plan the opportunity (that rightfully belonged to the registered funds) to purchase certain attractive equity securities that were offered as an inducement to investors to purchase the high-yield securities. ***Loss to Complex: Defense costs; SEC sanctions; reputational damage.***

Managing the Unique Legal Liability Risks of Bond Funds

As discussed above, the Study suggests that certain features of bond funds and bond fund management give rise to unique legal liability risks for bond fund complexes. As a result, legal and regulatory concerns, as well as common-sense business practice, dictate that complexes should implement risk management practices reasonably designed to manage these unique legal liability risks. The nature of such an effort will be influenced by a complex's history, development, and culture, and should be reasonably designed to protect the complex without unnecessarily stifling legitimate entrepreneurial activities. At a minimum, however, this effort should be designed to limit a complex's exposure to "franchise risks," i.e., those risks that could result in substantial economic losses or give rise to significant regulatory actions. The nature and magnitude of the bond fund losses discussed above demonstrate that the unique risks of bond funds frequently can give rise to franchise risks.

The Study suggests that, more so than with other types of funds, a bond fund complex's business practices are pivotal in determining the nature and extent of a complex's exposure to the unique legal liability risks of bond funds. The Study does not suggest that the only way to address these unique risks is to adopt only the most conservative business practices. Rather, management should recognize that a strong linkage exists between a complex's business practices and the legal liability risks arising from its bond funds. For example, while yield-based marketing is permitted by applicable regulatory requirements, a complex that does so should understand that this approach may encourage riskier investments and other conduct that, in turn, may increase the complex's legal liability risks. Armed with this understanding, the complex may then implement appropriate risk management techniques reasonably designed to manage the risks it has assumed.

This section sets forth questions that management may wish to consider in evaluating how the complex's business strategies affect its legal liability risks from bond funds. The next section sets forth issues that complexes might wish to consider in structuring techniques to address the unique legal liability risks of bond funds, and discusses specific techniques used by some complexes to manage such risks.

Evaluation of Business Practices

In considering how its business practices affect the complex's exposure to the unique legal liability risks of bond funds, management may wish to consider the following questions, among others:

- *Bond Fund Strategy.* What role do bond funds play at your complex? Bond funds can play significantly different roles at different complexes, and the role they are designed to play significantly affects a complex's exposure to legal liability risks. At many retail complexes, bond funds are marketed as stand-alone investments. As a result, these funds usually are expected to seek a high yield relative to their peers and are more likely to use complicated debt instruments and investment strategies. In contrast, some complexes offer bond funds only as part of asset allocation strategies. In this more conservative

role, bond funds are generally expected to seek principal protection rather than necessarily competing against their peers. Similarly, bond funds offered to institutional investors generally are promoted on the basis of total return, and are thereby less likely to implicate the risks of yield-based marketing. Whatever strategy management determines to follow for its bond funds, it is important to recognize that the risks the complex will face, and the level of oversight appropriate for those funds, will be directly affected by that strategy.

- *Marketing Practices.* Are your marketing practices consistent with your complex's bond fund strategy? Management should consider whether marketing practices for bond funds are consistent with the role that bond funds play at the complex. Complexes should be sensitive to the risks associated with characterizing their bond funds, directly or indirectly, as "conservative" investments. Complexes should be particularly sensitive to risks associated with marketing to retail investors, who are less accepting of NAV losses and who frequently perceive bond funds as "risk free." In appropriate cases, complexes may wish to consider the potential benefits of additional education of their salespersons and additional educational materials for investors.

- *Compensation Practices.* Are your compensation practices for portfolio managers and others consistent with your complex's bond fund strategy? Mutual funds complexes have predominantly "pay-for-performance" cultures.[45] Even within such a culture, management may wish to consider how compensation policies can promote the complex's risk management goals. Management should consider whether its compensation practices could provide incentives to portfolio managers and others to engage in conduct that is not consistent with those goals or, indirectly, to engage in misconduct. In addressing these issues, many firms compensate portfolio managers through a wide variety of approaches that typically involve a mix of current cash compensation and longer-term (frequently equity-based) compensation. The longer-term portion may be designed, in part, to ensure that managers do not become overly focused on short-term results. Many complexes also seek to ensure that compliance personnel understand the complex's compensation policies (consistent with legitimate personal privacy concerns) in order to monitor and identify questionable conduct that may be compensation-driven.

- *Oversight Practices.* Are your practices for overseeing the legal liability risks of your bond funds adequate in light of the nature of your bond funds? As discussed above, various business practices play a key role in determining the nature and extent of a complex's exposure to the legal liability risks of bond funds. As a result, management needs to tailor the complex's oversight practices to the particular risk profile of its bond funds. A complex with bond funds is likely to need a more extensive risk management effort than a complex that has only equity funds, and a complex that follows more aggressive business practices with respect to its bond funds is likely to need a more extensive risk management effort than a complex that follows more conservative business practices. Moreover, an equity complex that adds bond funds to its product offerings should not simply "clone" its oversight practices for these new funds, as the discussion above demonstrates that bond funds raise legal liability risks that are different than those faced by equity (and other types of) funds.

In light of the complexities of bond funds (and the legal liability risks they raise), many complexes have implemented a formal or informal risk management effort tailored specifically to their bond funds. Typically separate from and in addition to legal and compliance activities, this effort uses various risk management tools[46] in order to measure, monitor, and report to management on the nature and extent of the investment risks of the complex's bond funds, so as to permit management to "stay ahead of the curve." Complexes use risk management tools to better understand the risk "drivers" of their bond funds, such as through attribution analysis of fund performance, and to fill gaps in information not provided by traditional accounting systems.

Specific Risk Management Techniques

In addition to appreciating the nature and extent of their legal liability risks from bond funds, complexes should consider specific risk management techniques that may be appropriate to manage these risks. Discussed below are questions that complexes may wish to consider, and specific risk management techniques used by some complexes, in seeking to manage legal liability risks in the three loss areas discussed above.

USE OF COMPLICATED INSTRUMENTS AND STRATEGIES

In addressing the risks from the use of complicated debt instruments and investment strategies, complexes may wish to consider the following questions, among others:

- *Review of New Instruments/Strategies.* Does your complex require prior approval from management for the use of complicated debt instruments and investment strategies? Will these instruments and strategies be used in a manner with which the complex is generally familiar, or as a way of breaking into new investment areas? Does your complex have the necessary portfolio management expertise to use them prudently and the necessary expertise to adequately monitor this activity? Does your complex "stress test" the use of complicated instruments and strategies before using them with funds (and other client accounts)? Before using complicated debt instruments or investment strategies, management should ensure that the complex has the necessary portfolio management expertise and appropriate risk controls.[47] Many complexes formally or informally prohibit a portfolio manager from using any new debt instruments or investment strategies without management's prior approval. Approval is granted only after all affected parts of the complex (e.g., trading, accounting, compliance) have confirmed their ability to properly handle the proposed new activity. At some complexes management has established distinct processes for the introduction of new instruments/strategies. For some complexes, this vetting process will include "stress testing" of the instrument/strategy under various hypothetical market conditions. Other complexes also impose limits on the use of new instruments/strategies until they have sufficient "real world" experience.

- *Understanding Investment Performance.* Does your complex monitor both exceptional and unexceptional investment performance? In the case of a bond fund that outperforms its peers, does your complex understand the basis for the higher performance and what risks may have been assumed in achieving it? Many complexes impose additional scrutiny where a bond fund unexpectedly produces relatively good or bad performance (yield or total return) or where a fund materially outperforms or

underperforms its peers. This additional scrutiny is designed to help management and compliance understand the reasons why the fund is out-performing or under-performing. In the case of out-performance, a key goal for management and compliance is to understand what additional risks the fund may be assuming to achieve that performance.[48] This review also is designed to alert management and compliance to potential misconduct.

- *Training/Education.* Does your complex have formal or informal training programs designed to ensure that portfolio managers and other personnel are aware of and sensitive to the liability risks posed by the use of complicated instruments and strategies? Does your firm clearly convey to each person involved in these new activities the nature of their duties and responsibilities? Most complexes recognize that training — formal or informal — is a critical part of their risk management efforts. This training may take place informally or through regular meetings or written communications. Most complexes also have a written compliance manual or other procedures that are updated regularly to address new activities.

- *Disclosure/Marketing Practices.* Does your complex have a formal procedure for reviewing regulatory disclosures and marketing materials, before first use and periodically thereafter, in light of the use of complicated instruments and strategies? Is this review designed to ensure that your disclosures accurately and adequately discuss the risks of these new activities and your complex's current practices regarding them? As discussed above, most private and regulatory actions relating to bond fund losses include an allegation of inadequate risk disclosure in regulatory and marketing documents, and frequently this risk raises the most serious financial exposure for a complex. While no amount of risk disclosure can prevent a claim from being filed, complexes can take steps to reduce their risk of successful disclosure/marketing claims. Particularly when marketing to retail investors, complexes should seek to ensure that their disclosure and marketing practices reflect the special sensitivities of bond fund investors, including the potential to lose principal.

IMPROPER VALUATION OF PORTFOLIO SECURITIES

In addressing the risks from improper valuation of portfolio securities, complexes may wish to consider the following questions, among others:

- *Written Valuation Procedures.* Does your complex have written valuation procedures? Are your valuation methodologies known, understood, and consistently followed? Does your complex document the basis for all valuations? Most complexes interviewed have written valuation procedures that are communicated to all personnel involved in the valuation process, and significant compliance resources are dedicated to ensuring that valuation procedures are understood and implemented. These procedures impose a discipline on valuation decisions and require material information underlying decisions to be recorded, as most complexes recognize the significant benefits of documenting these decisions. Complexes review their procedures periodically in light of developments, and complexes typically make regular presentations on their procedures to the fund's board of directors. Many complexes also have established pricing or valuation committees to aid in administering the valuation process.[49]

- *Use of Independent Pricing Services.* If your complex uses an independent pricing service, have you established appropriate monitoring procedures?

When you use a pricing service, do you periodically check its valuations with other sources (e.g., a second pricing service)? Most complexes interviewed use one or more independent pricing services to value at least some of their bonds when they reasonably believe that the service's prices are not the best reflection of fair value. Complexes commonly document their rationale for using — and, perhaps more importantly, for not using — a pricing service. When a complex uses a pricing service, the complex frequently conducts regular due diligence reviews that may include on-site visits to the pricing service. Complexes also follow a variety of formal and informal practices to monitor the reasonableness of the pricing service's valuations, such as periodically checking prices with dealers and other market participants and using a second independent pricing service to verify the reasonableness of valuations. In addition, some complexes regularly compare the price at which bonds are sold to the prior day's pricing service price (i.e., the price at which the security was carried by the fund). Since the price at which a bond is sold in the market is typically the best evidence of its true value, this check allows the complex to evaluate the reasonableness and reliability of its pricing service's prices.

- *Procedures for Pricing Challenges.* Does your complex have procedures specifying how and to what extent portfolio managers may challenge prices for portfolio securities? If portfolio managers are involved in the challenge process, what checks, balances, and controls are in place? Most complexes have adopted formal or informal policies that allow portfolio managers and others to "challenge" bond valuations from independent pricing services and other sources when they reasonably believe that the valuation does not reflect fair value, particularly for illiquid or thinly-traded bonds (e.g., high-yield securities, municipal securities). The policies typically define the circumstances under which a challenge takes place, and frequently require a minimum "materiality" threshold before allowing a challenge to proceed. In light of the potential conflicts when portfolio managers are involved in valuation decisions, the policies typically permit portfolio managers to participate in the valuation process but preclude portfolio managers from unilaterally setting or changing a valuation.

- *Risk Tolerance Tools.* Does your complex use risk tolerance tools to verify valuations? Many complexes use supplemental risk tolerance tools to verify valuations, the specific nature of which depends on factors such as the nature of the complex's funds and the complex's size. For example, some complexes will check valuations manually if a bond does not trade for a specified number of days or if its price does not change for a number of days. Others will check valuations manually if a bond's valuation moves more than a predetermined amount in a day. Still others check valuations where a change in a bond's valuation moves a mutual fund's net asset value by a prescribed amount, such as one cent per share. Finally, as noted above, some complexes use various specific techniques to verify their pricing service's valuations.

INTENTIONAL MISCONDUCT

In addressing the risks from intentional misconduct, complexes may wish to consider the following questions, among others:

- *Portfolio Manager Structure.* Are your complex's bond funds managed by individual portfolio managers or by teams? If by individuals, are their activities incorporated into your complex's other investment management functions, or are they generally autonomous? In the latter case, what

additional checks, balances, or controls do you use to oversee these activities? Some bonds funds are managed by a sole portfolio manager, while others are managed by a team or committee. While neither structure is necessarily preferable, the data shows that the sole manager structure is more susceptible to permitting intentional or reckless misconduct to take place and remain undetected. Where a team manages a fund, intentional misconduct seems less likely, presumably because more "sets of eyes" are watching the fund and its investment activities. Many complexes that use the team approach cite these risk considerations as one reason for its adoption. Some fund complexes that use sole portfolio managers seek to obtain similar protection by, for example, ensuring that the activities of the sole portfolio manager are thoroughly understood and reviewed by other persons who are themselves knowledgeable about relevant investment management matters or by instituting other checks and balances into their oversight activities (e.g., use of an Investment Committee to oversee all portfolio management activities, client manager reviews of investment performance).

- *Separation of Functions.* To reduce the potential for good faith errors or intentional misconduct, does your complex separate front, middle, and back office functions wherever possible? If separation is not possible because of staffing limitations, have you established alternate checks, balances, and controls? The loss history of bond funds, and the lessons from rogue trading losses generally, evidences that the most egregious misconduct frequently involves long-term trusted employees in positions of responsibility, who act not for direct personal financial benefit, but to maintain or improve their status or the esteem in which they are held by their employers. It is difficult to fathom, let alone influence, the motivations of such wrongdoers. Accordingly, it is critical to take all practicable steps to eliminate the opportunity for such individuals to engage in undetected misconduct. Many complexes seek to separate the different functions in managing a bond fund, particularly investment decision-making, trading, settlement, and compliance. The data indicates a greater potential for intentional misconduct where these functions are not separated. Where complete separation may not be practical, such as at smaller complexes, many complexes otherwise institute appropriate checks, balances, or controls designed to reduce the potential for misconduct by any individual or group of individuals.

- *More Rigorous Scrutiny of Top Performing Funds.* Do your risk management procedures apply uniformly to all funds and portfolio managers? Do you apply more rigorous standards to top performing bond funds? Obviously, complexes are pleased when their bond funds produce superior investment performance for clients. Precisely because a fund is top performing, a complex may view the fund as less in need of oversight and, therefore, apply less scrutiny, or less rigorous scrutiny, to the fund or its portfolio manager and associated personnel. When viewed from a legal liability perspective, however, top performing bond funds can involve greater risks, particularly from intentional misconduct, since individuals may engage in questionable activities out of a desire to achieve or maintain top performance. Many complexes recognize that it is prudent to apply heightened scrutiny both to top performing funds and to poor performing funds — the former because it is important to understand what risks the portfolio manager may be taking to achieve superior performance and the latter because a portfolio

manager may be tempted to take extraordinary risks to improve poor performance, i.e., "swing for the fences."

- *Oversight of Collateral Management Activities.* What oversight do you apply to persons, other than the primary portfolio manager, who make investment decisions affecting a fund (e.g., currency traders)? How does your complex ensure that these "secondary" portfolio managers comply with applicable limitations on their authority? How frequently does the primary portfolio manager review these activities? A recurring theme in bond fund losses is undetected activity by "secondary" portfolio managers in currencies or similar instruments that either is unauthorized or that exceeds applicable limitations. While the primary portfolio manager would seem to be in the best position to police and detect this type of misconduct, the circumstances and severity of these types of losses underscore the significant oversight issues involved. Many complexes apply heightened oversight to the activities of "secondary" portfolio managers and require regular and thorough review of these activities (and documentation adequate to permit such a review) by the primary portfolio manager and other appropriate personnel.

- *Monitoring of Employee-Related Accounts.* Does your complex apply heightened monitoring to portfolio management activities for employee-related accounts (i.e., accounts in which employees of the complex or related parties have a financial interest)? As noted above, bond fund losses that arise from intentional or reckless misconduct have rarely involved a direct personal gain. Rather, a more common scenario is that a portfolio manager or other individual in a position of authority trades securities in a manner that benefits an employee-related account (e.g., the complex's retirement plan), to the disadvantage of client accounts. Recognizing this conflict, many complexes apply heightened monitoring to employee-related accounts, particularly in the case of unexpectedly good performance or consistent outperformance of similar client accounts. Similarly, complexes also frequently apply heightened scrutiny to accounts for which the complex receives performance-based compensation.

- *Valuation.* Does your complex take steps to ensure that portfolio managers' participation in the valuation process is appropriately limited and that they do not, on their own, have the ability to establish bond prices? The data shows that complexes have suffered significant losses when portfolio managers have a relatively "free hand" in valuing less liquid instruments. While portfolio managers have an appropriate role in the pricing process, most complexes take steps to ensure that portfolio managers cannot, on their own, make final pricing decisions. Similarly, complexes design their oversight to seek to ensure that the portfolio manager is not the sole source of valuation data upon which others make a valuation decision. Furthermore, to the extent portfolio managers are involved in the pricing process, most complexes seek to ensure that their participation is subject to appropriate checks and balances.

Endnotes

[1] For purposes of this Study, we define a "bond fund" as a fund that invests primarily in domestic or foreign fixed income securities, which typically include securities issued by governmental entities or corporations. Types of bond funds include corporate, global, GNMA, high-yield, income, national municipal, state municipal, and U.S. Government funds. Most, but not all, bond funds invest in securities that pay regular interest. Domestic bond funds may invest primarily in taxable or tax-exempt securities. This Study does not seek to address the specialized risks raised by money market funds, which are not generally viewed as bond funds despite the fact that they invest primarily in fixed income instruments.

[2] See, e.g., Mintz, Dakin, Willison, and Tobias, "Beyond Wall Street: The Art of Investing" at 141 (John Wiley & Sons 1998) (bond funds should "act as anchors to windward that help keep the ship safe and values secure"); Fredman and Wiles, "How Mutual Funds Work" at 173 (New York Institute of Finance 1998) ("The best strategy for most investors is simply to use bond funds to meet liquidity, preservation of capital, and income needs."); Lavine and Liberman, "The Complete Idiot's Guide to Making Money with Mutual Funds" at 143 (Alpha Books 1995) (noting that bond funds are "less risky than many stock mutual funds").

[3] See, e.g., Lavine and Liberman, supra at 134 ("Bond mutual funds are particularly attractive for retirees or those who need regular income for living expenses."); Ellis, "How To Pick Fund Winners" at 77 (Money Books 1996) (noting that bond funds "are particularly attractive to retirees and other people who depend on investment earnings for a large portion of their everyday living expenses").

[4] Specific defendants in litigation and regulatory actions may include, in addition to bond funds themselves, fund directors, investment advisors and associated portfolio management and supervisory personnel.

[5] See ICI Mutual "Investment Management Compliance Risks: A Study of Common Pitfalls and Risk Management Techniques" (2001). The 2001 Study observed that the risks faced by all mutual funds arise from the following six key activities in the investment management process: (1) selection of securities; (2) execution of orders; (3) allocation of brokerage; (4) allocation of securities to client accounts; (5) pricing of portfolio securities; and (6) disclosure relating to investment management matters.

[6] Given the Study's focus on significant risks of bond funds, ICI Mutual limited its review to claims that resulted in payments of more than $1 million or, in the case of publicly-reported matters where losses were not disclosed, matters that ICI Mutual reasonably believed resulted in legal liabilities of at least $1 million.

[7] See, e.g., "A Guide to Understanding Mutual Funds" at 6, 10 (Investment Company Institute 2000) ("Although there have been past exceptions, bond funds tend to be less volatile than stock funds and often produce regular income."); Rowland, "A Commonsense Guide to Mutual Funds" at 12, 200 (Bloomberg Press 1996); Salomon Smith Barney, "A Stock Buyer's Guide to Bond Investing" (2002) ("As the old Wall Street adage proclaims: Make your money in stocks, but keep your money in bonds.").

[8] See "Invest Wisely: An Introduction to Mutual Funds" at 4 (Securities and Exchange Commission, Online Publication for Investors).

[9] See, e.g., Mintz, et al., supra at 144-145 ("A top-notch bond manager, according to Bill Gross, must now be one-third economist, who knows – or thinks he or she knows – when interest rates are going up or down; one-third mathematician, because bonds are mathematical creatures; and one-third horse trader, because there is a buyer and a seller in every transaction, and there are always people at the other end of the telephone line who want to take your money.").

[10] Source: The Bond Market Association.

[11] Sources: New York Stock Exchange and NASDAQ.

[12] Credit risk is the risk that a bond issuer will be unable to pay the principal at maturity or make interest payments in a timely manner. Credit risk is typically reflected in bond quality ratings, which are divided into three categories (high-grade, medium-grade, and speculative). Each category is further divided into various gradations that reflect relative risk within the category. See Fredman and Wiles, supra at 171. Interest rate risk is the risk that a bond's value will fall as interest rates rise and rise as interest rates fall. Id. at 167. Prepayment risk is the risk that the borrower may repay the principal on a bond and the fund may have to reinvest the proceeds in a less attractive security. Id. at 186. Reinvestment risk is the risk that when interest rates fall, so do the rates at which bond interest payments can be reinvested. Id. at 167.

[13] See, e.g., Kopprasch, "Fixed Income Pricing Models" at III-A-9 (1995 Mutual Funds and Investment Management Conference) ("Over the years, so-called fixed income securities have become much more complex and many should not be called fixed income at all. They are debt securities but definitely not fixed income.").

[14] Asset-backed securities are securities backed by other instruments, such as credit card receivables, car loans, home equity loans, or other assets. The following example of the typical structure of an auto-loan securitization illustrates the complexity of these types of instruments: A finance company will purchase the auto-loan receivables and transfer them to a bankruptcy-remote special-purpose corporation. The receivables are then sold to a trust that issues asset-backed securities to investors. Payments made by consumers flow through the structure to investors. See Fabozzi, "The Handbook of Fixed Income Securities" at 628 (McGraw-Hill 1997).

[15] Some bonds are issued with an embedded option, typically a call option (a "callable bond"). The holder of this complex type of bond has given the issuer the right to redeem the bond before its maturity date. The presence of the embedded option affects both the bond's spread relative to a Treasury security and relative to otherwise comparable issues that do not have an embedded option. Valuation of callable bonds raises significant issues, since in effect the holder of a callable bond has bought a noncallable bond and has sold a call option. Among the methods used to value callable bonds are the binomial lattice model, Monte Carlo method, and the continuous-time diffusion method. See Fabozzi, supra at Chapter 36.

[16] A collateralized mortgage obligation ("CMO") is a security backed by a pool of pass-throughs or a pool of mortgage loans. CMOs are structured so that there are several classes of bond with varying maturities (each bond class is sometimes referred to as a tranche). Among the various types of bonds created are complex instruments such as sequential-pay bonds, planned amortization class (PAC) bonds, accrual (or Z) bonds, inverse floating-rate bonds, target amortization class (TAC) bonds, support bonds, and very accurately determined maturity (VADM) bonds. See Fabozzi, supra at 16.

[17] Floating-rate notes includes different types of securities that all have an interest rate that is adjusted periodically based on a change in the base or benchmark rate; adjustable-rate notes have interest rates based on a longer-term index. Id. at 6.

[18] An inverse floater is a type of bond that pays interest at a rate that moves in the opposite direction of changes in general interest rates. Id. at 6-7.

[19] IOs and POs are stripped mortgage-backed securities in which all of the interest is allocated to one class (the interest-only, or IO, class) and all of the principal is allocated to the other class (the principal-only, or PO, class). Id. at 17.

[20] When-issued securities are securities that are issued on a delayed delivery basis. By purchasing such a security, a fund locks in the purchase price and interest rate prior to the delivery date.

[21] "Barbelling" refers to a portfolio strategy in which the maturities of debt instruments are concentrated at short and long durations with few or no intermediate term holdings. "Convexity" refers to the degree of curvature in the price/yield relationship. It measures the rate of change of duration as yields change. Depending on the circumstances, a bond may be said to have either positive or negative convexity. "Duration" is the weighted average term-to-maturity of a fund's cash flow. It is a measure of a fund's price volatility and reflects the approximate percentage change in the price of a fund to a 100 basis point change in interest rates. See Fabozzi, supra at 19, 85, 93-94. The "yield curve" refers to the graphic depiction of the relationship between the yield on bonds of the same credit quality but with different maturities. A normal, upward-sloping yield curve indicates that longer-term bonds pay higher rates than shorter-term ones, while a downward-sloping, or "inverted," yield curve means that shorter-term bonds pay higher rates than longer-term ones. See Fredman and Wiles, supra at 166.

[22] When buying or selling a bond, a portfolio manager cannot simply call up current market information about the market for that bond. Rather, the manager typically contacts several dealers to seek bid and offer quotations, and on some days the manager may not receive any quotations or may receive firm quotations only for relatively small transactions. Unlike much equity trading, no intermediary will "make a market" in a bond where there is a shortage of buyers or sellers. As a result of the way bond transactions are effected, the bond markets are frequently referred to as "negotiated" markets. This contrasts with the "auction" markets used for equity securities, in which the securities are actually auctioned, with the price being set by the highest bid and the lowest offer. See Staff of the New York Institute of Finance, "How the Bond Market Works" at 183 (Simon & Schuster, Inc. 1988).

[23] "Liquidity" refers to the ease with which a fund or other holder can sell a bond at or near its true value. See Fabozzi, supra at 22. In the SEC's view, a security is "liquid" if it can be sold or disposed of in the ordinary course of business within seven days at approximately the value at which the security is valued by a fund. See, e.g., Investment Co. Act Rel. No. 18612 (Mar. 12, 1992). See also Fredman and Wiles, supra at 167-168 ("*Liquidity risk*. Thinly traded securities, including many municipal bonds, carry this danger of not being easily salable…. This also can be a problem for junk-bond funds and some higher-quality corporates.").

[24] See, e.g., Phillips and Simmons, "Mutual Fund Pricing and Liquidity Determinations: Dancing on a Tightrope" at III-A-24 (1995 Mutual Funds and Investment Management Conference) (in discussing more esoteric investments by mutual funds, including fixed income securities, it is noted that "[t]hese instruments, though innovative and trendy, often have no trading market or the market that exists may be too fragile to provide realistic quotations on a regular basis.").

[25] See Mulherin, "Market Transparency: Pros, Cons and Property Rights," *reprinted in* Lehn and Kamphuis, "Modernizing US Securities Regulation" at 333 (Center for Research on Contracts and the Structure of Enterprise 1992) ("A perfectly transparent market would be an environment where all relevant information including transaction prices, trading volumes, quotes, order flow, and trader identification is instantaneously available to all potential investors.").

[26] As noted above, professionals typically recommend bond funds for the more conservative portion of an investor's portfolio. This advice is consistent with the demographics of bond fund investors, who generally tend to be slightly older and wealthier than the average mutual fund shareholder and are more likely to be retired. See "A Guide to Understanding Mutual Funds" at 5 (Investment Company Institute 2000). See generally Vujovich, "Straight Talk About Mutual Funds" at 193 (McGraw-Hill 1997) ("'When it comes right down to it, I don't really care how much money I make as long as I don't lose any of my money,' says a retiree in North Carolina. 'All that risk and reward stuff goes right out the window when I'm losing money.'").

[27] The reaction of investors to significant losses also may support the widespread belief that many investors do not fully appreciate the risks of bond funds. For example, one recent survey suggests that most bond owners lack a basic understanding of how bond funds work. See "Survey: Few Investors Understand Bond Funds," Ignites.com (May 9, 2002) (citing Harris Interactive poll which found that approximately 70% of bond fund shareholders do not know what effect a change in interest rates would have on their fund); "Befuddled by Bond Funds," CBSMarketWatch.com (September 25, 2002) (citing 2002 Vanguard/Money Investor Literacy Test result that 60% of respondents misconstrued bond maturity). See also "Bond Funds," www.sec.gov/answers/bondfunds.htm (Securities and Exchange Commission online answers) ("A common misconception among some investors is that bonds and bond funds have little or no risk."); Mintz et al., supra at 137 (the inverse relationship between bond yields and prices "is difficult to grasp, not least because it's hard for average investors to interpret news that affects bonds").

[28] See Investment Company Act Rel. No. 20974 at text accompanying n. 11 (March 29, 1995). See also Opdyke, "Think Bond Funds are a Safe Place to Stash Your Cash? Think Again," Wall Street Journal at D-1(August 21, 2002) (noting that when investors see a loss in their bond fund account "they're going to think: How is this possible? Bonds are supposed to be safe."); Vujovich, supra at 206 (after noting that bond fund NAVs typically fluctuate a few cents a day, cautions "But if your bond fund's NAV is falling by dollars instead of cents throughout the year, call your fund family and ask why.").

[29] The data does not suggest any specific level of NAV decline that is likely to trigger legal actions, though the trigger point clearly differs depending on the fund's maturity, i.e., the NAV decline necessary to trigger legal action against a short-term bond fund is likely to be less than that for a long-term bond fund. See generally "If you lose a little bit of money, you pay. If you lose a lot of money, you call your lawyer," Remarks by Thomas A. Russo before the Broker-Dealer Regulation Conference (Jan. 12, 1995) *cited in* Robertson and Paulson, "Regulation of Financial Derivatives: A Methodology for Mutual Fund Derivative Investments," 1 Stan. L.J. Bus. & Fin. 237, 269 (Spring 1995).

[30]See *Okley v. Hyperion 1999 Term Trust, Inc.*, 98 F.3d 2, 7-8 (2d Cir. 1996), cert. denied, 520 U.S. 1264 (1997). The court observed that "not every bad investment is the product of misrepresentation." The court noted that, to show misrepresentation, "the complaint must offer more than allegations that the portfolios failed to perform as predicted," and added that "no reasonable investor could have relied on perfect [management] because that was not promised." See also *Kramer v. Time Warner Inc.*, 937 F. 2d 767, 776 (2d Cir. 1991) ("It is the very nature of securities markets that even the most exhaustively researched predictions are fallible.").

[31] Claims of improper marketing practices, because they too are invariably based on largely subjective factors, also present significant risks to complexes.

[32] See "Ten Things We Know and Ten Things We Don't Know About the Private Securities Litigation Reform Act of 1995," Joint Written Testimony of Joseph A. Grundfest and Michael A. Perino before the Subcommittee on Securities of the Committee on Banking, Housing, and Urban Affairs, United States Senate, on July 24, 1997 (numbers 5 & 6 under II).

[33] Rule 482 under the Securities Act of 1933 permits mutual funds to advertise their current yield, tax-equivalent yield, total return, and after-tax return, in accordance with standardized formula.

[34] See, e.g., Christensen, "Surviving the Coming Mutual Fund Crisis" at 139 (Little, Brown and Co. 1994) ("And, it seems, it's yield that bond fund investors are focused on."); "Forget Maturity. Think Duration," Kiplinger's Personal Finance Magazine at 86 (June 1994) ("'People who buy bond funds tend to do so on the basis of yield . . ..'"). Since 1988, the SEC has required bond funds to use uniform, annualized 30-day yield quotations in advertising and sales materials that are designed to assist investors in comparing different funds. Bond fund sales materials typically focus on current yield for taxable bond funds and tax-equivalent yield for municipal bond funds.

[35] Various commentators suggest that investors should consider a fund's total return, as well as its yield, when making an investment decision. See, e.g., Fredman and Wiles, supra at 194 ("Nobody should ever buy a fund on the basis of yield alone. It tells only part of the story and can be misleading. Total return provides a far more complete measure of performance."); Gould, "The New York Times Guide to Mutual Funds" at 197 (Times Books 1992) (when considering a bond fund, an investor "must look at both elements of total return"); "Eight Basics of Bond Fund Investing" at 13 (Investment Company Institute 1994) ("Yield alone – the amount of income the fund is generating – is only part of the story."); Christensen, supra at 148 ("Never let yield attract you to a bond fund. . . . It is total return that is of interest."). Cf. Investment Company Act Rel. No. 15315 (Sept. 17, 1986) (in proposing mutual fund advertising rules, the SEC expressed concern that yield-based marketing, unless it includes total return, may confuse investors about the true nature of their investment).

[36] See, e.g., Tyson, "Mutual Funds For Dummies" at 161 (IDG Books Worldwide, Inc. 1995) (noting that a higher yield makes it easier for a complex to promote a bond fund); Christensen, supra at 139 (noting that "it is yield that the mutual fund promoters emphasize in their ads. It's yield that those performance charts in newspapers and magazines highlight."). Some complexes also compete for high yield through the use of fee and expense waivers, particularly shorter-term bond funds.

[37] See, e.g., Fredman and Wiles, supra at 194 ("In fact, high yields [for bond funds] inevitably imply greater risk."); Ellis supra at 77.

[38] See, e.g., Mintz, et al., supra at 141-143 ("As cadres of professional bond managers developed an appetite for beating inflation, Wall Street's investment bankers cooked up more and more confections. New types of bonds featured myriad complexities and all degrees of risk.").

[39] See, e.g., Fredman and Wiles, supra at 197 ("It's also critical to understand how a fund's yield has been derived because high payouts often imply added risk or other problems."); Bogle, "Bogle on Mutual Funds" at 102 (Bantam Doubleday Dell Publishing 1994) ("Be cautious of a fund whose gross (pre-expense) yield significantly exceeds market norms. If a fund's gross yield is well above the norm, ask some hard questions of the fund's sponsor."); Kiplinger's, supra at 88 (June 1994) (notes that derivatives frequently do not "behave the way the bond math suggests" in a rapidly moving market environment).

[40] See, e.g., Business Week's Guide to Mutual Funds at 32 (McGraw Hill 1994). Compensation practices for bond fund portfolio managers also are relevant to managing risks.

[41] See, e.g., "Bond Market Kaboom," Pensions & Investments at 1 (Sept. 16, 2002) (noting that, according to one consultant, bond manager returns normally are so tightly clustered on a scatter chart that one "can barely make out the space between the lines").

[42] See, e.g., Fredman and Wiles, supra at 196 ("Derivatives can help juice up returns, but the manager must take on added risk in the process.").

[43] Note: Where this Study uses the phrase "Loss to Complex," the associated dollar figure does not represent loss to fund shareholders or clients, but to the fund complex. The figure is not adjusted for any insurance proceeds or other recovery received by the fund complex. Where known, the reported figures include legal fees incurred by the complex in defense of the underlying action(s). In the case of losses by non-insured complexes, the dollar figures are derived from publicly available information.

[44] See Phillips and Simmons, supra at III-A-24.

[45] See, e.g., AIMR, "Results of 1999 Compensation Survey of Investment Management Professionals Released by AIMR and Russell Reynolds Associates" (AIMR Press Release, www.aimr.com/pressroom).

[46] This Study uses the term "risk management" to refer to a system of analytical processes used to identify and measure various investment risks of a bond fund (*e.g.*, portfolio modeling, attribution analysis of fund performance).

[47] In the case of derivatives, for example, regulators have emphasized that strong controls are generally essential for monitoring and controlling risk. See, e.g., Statement of the Securities and Exchange Commission, the Commodity Futures Trading Commission and the Securities and Investments Board, OTC Derivatives Oversight 3-4 (Mar. 15, 1994); Investment Company Institute, "Investments in Derivatives by Registered Investment Companies" 4-6 (Aug. 1994).

[48] See generally "Performance Focus Turns on Risk Assessment," *Fund Directions* (Sept. 2002) (noting that mutual fund directors are increasingly focusing not only on performance relative to peer groups and benchmarks but performance relative to the level of risk the fund is assuming).

[49] Guidance from the SEC and its staff on valuation focuses primarily on the need for a rigorous and flexible valuation process that incorporates all appropriate factors relevant to the value of a security. See Accounting Series Rel. No. 118 (Dec. 23, 1970); Accounting Series Rel. No. 113 (Oct. 21, 1969); and Letters to Craig Tyle, ICI, from Douglas Scheidt, Associate Director and Chief Counsel, Division of Investment Management, SEC, dated Dec. 8, 1999 and April 30, 2001.

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