TIAA-CREF asset management®

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MANAGING INVESTMENT RISK IN VOLATILE MARKETS

In the last few weeks the CEOs of Citi and Merrill Lynch lost their jobs as their firms took third-quarter writedowns of over $8 billion apiece due to losses in the structured securities markets. Similarly, Bear Stearns, Goldman Sachs, Morgan Stanley, Wachovia, and other financial services firms have posted multibillion dollar hits to income or to their hedge funds. Some firms are forecasting further losses in the remainder of this year. Observers and the firms themselves have cited inadequate risk analysis and controls as contributing factors. In addition, a new accounting standard concerning securities valuation — FAS 157 — goes into effect for fiscal years after November 15, 2007. FAS 157 is expected to contribute to additional writedowns of certain structured securities. This situation prompts us to discuss TIAA-CREF's approach to measuring and managing risk for structured securities and other investments. This includes:

- Key elements of investment risk and how TIAA-CREF Asset Management assesses them;
- The special challenges of risk assessment and management in illiquid assets: and
- TIAA-CREF's approach to investment risk prevention and control, with a special focus on the structured securities markets.

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You might think that investment risk is a singular element, easy to define and measure. Fortunately, at heart, risk does have a common fundamental element. That is the relationship between the potential for loss and the potential for reward. In other words, what is the chance that my investment will incur a loss or fail to achieve a particular return? Moreover, we know that as the expected return of an investment increases, so does the risk of a loss. We often summarize this as the risk-return tradeoff and we often measure it in terms of the volatility of an investment's returns over time. Hence when we think of risk we mean that we can specify a probability distribution for returns. Keep in mind that risk can be absolute or relative. Absolute risk has to do with total volatility or the chance of any sort of loss. Relative risk refers to the volatility or the chance of a loss with respect to an appropriate benchmark.

Investment risk, whether absolute or relative, is multifaceted. It can be the result of a security's or asset's exposure to a wide range of factors, including changes in interest rates, a specific economic sector, capitalization size and style, the possibility of a credit default, and many others. The job of investment managers and executives is to figure out which risks are worth bearing ("good" risk) and which they choose to avoid ("bad" risk). In addition, investment managers may choose to hedge risks, thereby giving up some fraction of expected return for protection against some amount of loss. To make these decisions, TIAA-CREF has over the years developed procedures and a strong team of risk-minded investment managers and the Risk Management division. They work together to assess risks, measure them, and manage them. In fact, in addition to seeking sources of return their main job is to manage risk.

TIAA-CREF Asset Management focuses on security selection, the disciplined taking of good risks. TIAA-CREF limits the amount of security selection risk it is willing to take and works to remain neutral with respect to regional and sector risks that TIAA-CREF Asset Management feels it doesn't have an advantage in taking. To do this, the Risk Management division regularly measures and forecasts risks in form of tracking error and factor exposures. Asset Management uses these measures and others to set boundaries or limits on the types and amounts of risk it will take in its accounts and funds. For example, one of the reasons that TIAA-CREF believes in being fully invested is that there is rarely enough information available to accurately decide when to increase or decrease a fund's exposure to cash. In the case of cash, there is an unacceptable risk of being wrong.

Some assets pose special challenges for risk and investment managers. These can include many asset classes that are difficult to mark to market on a daily basis, such as timber, structured securities such as CDOs (collateralized debt obligations), certain RMBS (residential mortgage backed securities) and other relatively illiquid assets. Investors may be able to take advantage of illiquidity by demanding higher expected returns than can be generated by purchases of more liquid assets. In contrast to highly liquid public equities and bonds, however, it may be difficult to know from day to day or even month to month exactly what some illiquid assets are worth. For example, the problem of valuing structured securities containing subprime mortgages played a major role in recent and ongoing writedowns for some financial firms as they realized that they had been too optimistic about how much some of their holdings were worth.

Over the past year, as credit spreads narrowed (i.e., the difference in yield between a fixed-income asset and a comparable U.S. Treasury), TIAA-CREF's investment and risk management teams began to feel as though the diminished extra return wasn't worth the rising risks that they were seeing in certain markets. So we modestly decreased exposure to credit risks in many of our portfolios by investing somewhat more in U.S. Treasuries, which bear no credit risk.

Perhaps even more important, the risk and investment management teams looked carefully at the value of securities with exposure to subprime housing mortgages. Even though the credit rating agencies were still assigning high ratings to structured securities containing a sizable proportion of these mortgages, TIAA-CREF's own risk assessment concluded that many of these securities posed significant risk of partial or full default as the housing market rolled over and subprime mortgages hit their teaser rate reset trigger points. As a result, the teams concluded that these securities were mispriced and that the market would eventually come to this conclusion as well and prices would collapse. We have reduced exposure to securities containing subprime mortgages and did not participate in additional purchases. In contrast, we continued to hold high-quality structured securities in other areas.

Does TIAA-CREF seek to avoid investment risks? Of course not. That wouldn't be in our participants' best interest. Without risk there is no possibility of obtaining an extra return. Instead, TIAA-CREF Asset Management avoids certain types of risk, prudently pursues the risks that it believes are worth taking in the name of return, and sets limits on the amount of risk it is willing to take. While there is no way of knowing in advance how successful any firm will be in this regard, TIAA-CREF's approach helps limit risk while still seeking to outperform our benchmarks.

Brett Hammond, Leo Kamp and Douglas Fore are available to comment on economic data. If you wish to speak with them, please contact Chad Peterson, Media Relations, 212-916-4808 or email cpeterson@tiaa-cref.org.

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