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BRETT HAMMOND
CHIEF INVESTMENT
STRATEGIST

MARTHA PEYTON
MANAGING DIRECTOR,
GLOBAL REAL ESTATE

MANAGING RISK EFFECTIVELY

Risk management has become an essential part of the investment process by supporting alignment of professional investors' interests with those of their clients. Risk managers, working closely with but independently of, investment managers are responsible for identifying material sources of risk; measuring and monitoring those risks; and devising approaches to control, mitigate or hedge those risks. Risk management is not in the business of eliminating risk entirely, but rather with helping investment managers decide which risks are worth taking in the pursuit of positive returns.

MANAGING INVESTMENT RISK

Investors are their own risk/return managers, since it is up to them to gauge not only the potential return, but also the possible risk of any investment. However, in the real world, decisions are often made by professional investment managers acting on behalf of investors, but the consequences are ultimately shouldered by investors. This is an example of the principal/agent problem, where it is important to align the actions of the agents (investment managers) with the interests and goals of the principals (investors). Essentially, investment risk management — the identification, analysis, and mitigation of investment risks — is one of the critical elements in this process of aligning the interests of the managers with investors.



This week we focus on:

- The origins of risk management;
- The role of risk management in the investment process; and
- Various types of risk that can affect the investment firm and its portfolios.

Over the years, many tools, processes and regulations have been created to give investors assurances that investment managers are weighing risks and evaluating potential returns in a fashion that is acceptable to investors. Regulatory agencies and rules are perhaps the most visible of these, with additional oversight coming from the staff financial firms maintain to monitor and assure that the rules are obeyed.

During the 1980s, two developments set the stage for the expansion of risk management; more complex financial products and more demanding regulation. On the one hand, the combination of desktop computers, spreadsheet software and innovative financial products based on Black-Scholes option-pricing theory pushed the day-to-day risks associated with financial firms beyond the grasp of the rulebooks. On the other hand, the first international “Basel Capital Accord” introduced the beginnings of standardized bank capital requirements across member countries and established a link between required capital and risk. Risk management departments were established or beefed up at brokerage houses and banks in the 1990s, followed by insurance companies and fund firms such as TIAA-CREF in the early 2000s.

Functionally, risk managers are responsible for identifying material sources of investment risk; measuring and monitoring those risks; and devising approaches to control, mitigate or hedge those risks. Organizationally, risk management is separate from the areas of the firm responsible for making investments. At TIAA-CREF, the risk management unit reports directly to the CEO.* This functional and organizational separation provides risk managers with the mechanisms, independence, and organizational power to monitor investment decision-making and, when necessary, to challenge the risk/return

judgments made by the deal makers. This distinctive arrangement also leaves risk managers with wide latitude and enormous responsibility.

Note, however, that the responsibilities of risk management do not include eliminating risk-taking or usurping control of investment strategy or investment operations. Risk management is an ongoing process that requires risk managers to work closely and cooperatively with investment professionals on a day-to-day basis. The chief difference between risk managers and other investment professionals is their independence and narrow focus on risk.

Risk managers need to understand risks at all levels of the organization. In the chart on the following page, we arrange investment risks into three classifications:

- Overall firm-level risks,
- Product or fund-level risks,
- Portfolio-level risks.

A fourth classification of risk — at the individual holding level — can also be considered.

* TIAA-CREF’s Risk Management unit is responsible for a wide range of risks, including investment, operation, product, strategic, reputation, and any other risks that can affect the company.

Chart 1 describes each layer of risk along with measurement proxies and strategies for managing them.

CHART 1
FIRM-, PRODUCT-, AND PORTFOLIO-LEVEL RISKS

	RISK ITEM	WHAT IS IT	HOW TO MEASURE IT	HOW TO MANAGE IT
PORTFOLIO-LEVEL RISKS	Investment Concentrations	Risks related to size of each investment exposure	Tracking error versus benchmark	Monitoring, guidelines and limits
	Asset Correlations	Risks related to allocation among asset categories	Portfolio performance volatility	Strategy decisions, benchmarking, value-at-risk measurement
PRODUCT-LEVEL RISKS	Product Design Features	Related to competitiveness, style purity, “run on the bank” risk, etc.		Tracking style purity, monitoring competition, effective client communications
FIRM-LEVEL RISKS	Leverage	Essentially a tactical tool that can be applied at the property or business level		Monitoring price and availability of financing, internal duration matching, monitoring refinancing risk
	Business Operating Risk	Related to general management, accounting and cash management, marketing, personnel, etc.	Proxies include the fees and targeted return on capital that should compensate for firm-level risks	Operational risk management, audit activities, public relations and marketing expertise
	“Strategic” Risk	“Related to changes in the business environment and from adverse business decisions, improper implementation of decisions or lack of responsiveness to changes in the business environment” (Basel II)		Board oversight of high level business strategy and implementation

Firm-level risks are related to business operations, including general management, accounting and cash management, financing, marketing, technology, personnel, security, and so forth. At this level, risk managers will be involved in assuring that the business is prepared to deal with fundamental shifts in the business environment, event risks, such as power outages and transportation disruptions, and the checks and balances that control for inefficiency, fraud, and other operational risks.

Product- or fund-level risks are more subtle. Product risk is related to the viability and structure of each fund offered to investors. Risk managers will participate in product design, contributing to the analysis of demand for the product,

assessing its internal structure to align the portfolio with the characteristics of the product, and assessing its compatibility with existing systems and infrastructure. For example, in the real estate area, risk managers might assess the risk that clients will exercise liquidity options in open-ended funds and precipitate a “run on the bank” that will necessitate unplanned property sales.

Portfolio risks, such as fund volatility relative to its benchmark, concentration of holdings, and factor exposure (e.g., interest rate, illiquidity, inflation, country, sector, style, and other systematic risks) are the responsibility of portfolio managers who weigh them and the returns associated with them as part of the portfolio construction

process. Risk managers can add quantitative and qualitative expertise to address questions such as “How many holdings are necessary for optimum diversification?,” “How big a holding is too big?,” “What is the best way to assess factor exposures?,” and “What is the likely performance of a particular portfolio during a recession?”

In addition to these three types of risk, a fourth risk category is associated with **individual security holdings** (stocks, bonds, properties, etc.). These are mainly associated with a specific company or property and can include credit, management, ownership structure, project, franchise, and other risks.

Measuring, monitoring and managing individual holdings-level risks are essential activities of portfolio managers and analysts. The benefit of adding risk managers again involves their independence and narrow focus, their quantitative expertise, and their capacity to formalize and standardize. When addressing these holdings-level risks, risk managers will likely ask two questions: “Have all risks been identified?,” and “Do our policies allow us to take these risks?”

RISK MANAGEMENT IN THE 21ST CENTURY

In the past two decades, quantitative risk management techniques were first developed in the fixed-income area and have now spread to equities, real estate, private equity, structured securities, and other asset types. Academic researchers as well as practitioners have established techniques for improving risk measurement, understanding the sources of risk, and forecasting potential impacts on portfolios and the investment firm. Such developments are not designed to immunize investors against all risks. Rather, they have improved the ability of investors to decide which risks they want to take in pursuit of returns, and how much. In this regard, risk managers are similar to portfolio managers and investment research analysts in skill-set and sensibility; they differ from research staff in their focus on the risk side of the risk/return investment equation.

You should consider the investment objectives, risks, charges and expenses carefully before investing. Please call 877 518-9161, or go to tiaa-cref.org for a current prospectus that contains this and other information. Please read the prospectus carefully before investing.

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Brett Hammond is available to comment on economic data. If you wish to speak with him, please contact Chad Peterson, Media Relations, 212 916-4808 or email cpeterson@tiaa-cref.org.

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