

*Instead of looking at risk management as a roadblock, it should be promoted as part of your culture and viewed as the best way to ensure the firm's longevity.*

# Life in Financial Risk Management

*Shrinking Violets Need Not Apply*



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**W**hen you think of risk management, what comes to mind? Some people think of liability and casualty insurance, some conjure up visions of protecting against computer hackers, while others link the term to the process of ensuring a safe workplace. But this article focuses on financial risk management, sometimes referred to as financial engineering and often involving the use of derivative instruments.

Financial risk management is a global industry that represents a wide array of employment opportunities. As seen in “Various Risk Management Job Categories” on the next page, someone who works in this field may end up dealing with a distinct type of risk, a specific asset class, a particular type of organization, a given function or any combination thereof.

The typical day for an equity hedge fund risk manager is not at all the same as for a corporate treasury professional whose job is to prepare regulatory reports or stress test the exposures of a foreign business unit. Risk classifications aren't universal (e.g., model risk is sometimes categorized as a type of pricing risk while others may attribute it to operational risk).

This makes it virtually impossible to create one boilerplate job description. But the unifying theme is the employment of technology, quantitative analysis and a lot of common sense to balance risk against expected returns. In that sense, it's no different than any other financial decision-making activity.

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Financial risk management is a relatively new field, coming into its own after a few highly publicized debacles involving derivative instruments and the subsequent awareness about the need for controls. New financial reporting rules about derivatives and the regulatory climate have been agents of change as well.

## Corporate Culture

Even as firms recognize the need for risk management in some form, there's considerable diversity in their approaches. Organizations that integrate risk management with other aspects of the overall business model acknowledge its potential as a cornerstone of competitive advantage, seeking to capture market share from those firms that do just enough to comply with regulations and little else.

As Rich Apostolik, president of the Global Association

of Risk Professionals, points out, "early adopters have reaped tremendous benefits, especially in the investment management area. There is a distinct trend toward using risk managers as marketers, trotting them out to investors to assure them that the firm has strict policies and procedures in place, and to explain, from an 'independent' perspective, why certain trades and positions are being taken."

Apostolik added that those who fail to see risk management as a strategic tool "are relegating themselves to the back of the pack, not able to differentiate themselves to their clients or even to the regulators who are now taking a more 'active' oversight role."

Organizational mandate is everything because it determines the likelihood of success. A chief risk officer hired and supported by senior management speaks with greater

authority than someone who is viewed as creating extra work for already overloaded staffers. This is even more the case when the risk manager is part of the executive leadership team, reporting to the board audit committee or to the CEO.

According to Apostolik, "A chief risk officer is normally recognized as important as a chief financial officer and is typically given a seat on the firm's management committee because of the wide-sweeping impact of the decisions made about capital allocation and cost of funds. These have a domino effect on the entire organization's profitability and flexibility in responding to new opportunities."

A good risk manager must be seen as a team player and not as an internal regulator who nixes deals without offering appropriate alternatives. But it doesn't stop there. If the risk management function isn't

taken seriously by top officials, few resources will be made available (e.g., historical data, analytical staff, and computing power) and it's only a matter of time before everyone recognizes that changes simply can't be made.

The message is clear: Getting everyone on board is a precursor to putting an effective risk management function in place. And the only way to make this happen is to educate staff about its importance.

## Requisite Skills

What type of person would seek out a position in risk management? For one thing, an effective risk manager must feel comfortable asking lots of questions about how revenue is generated and at what cost, in terms of risk.

This is often easier said than done. Documentation may be sparse or non-existent. Original dealmakers may have

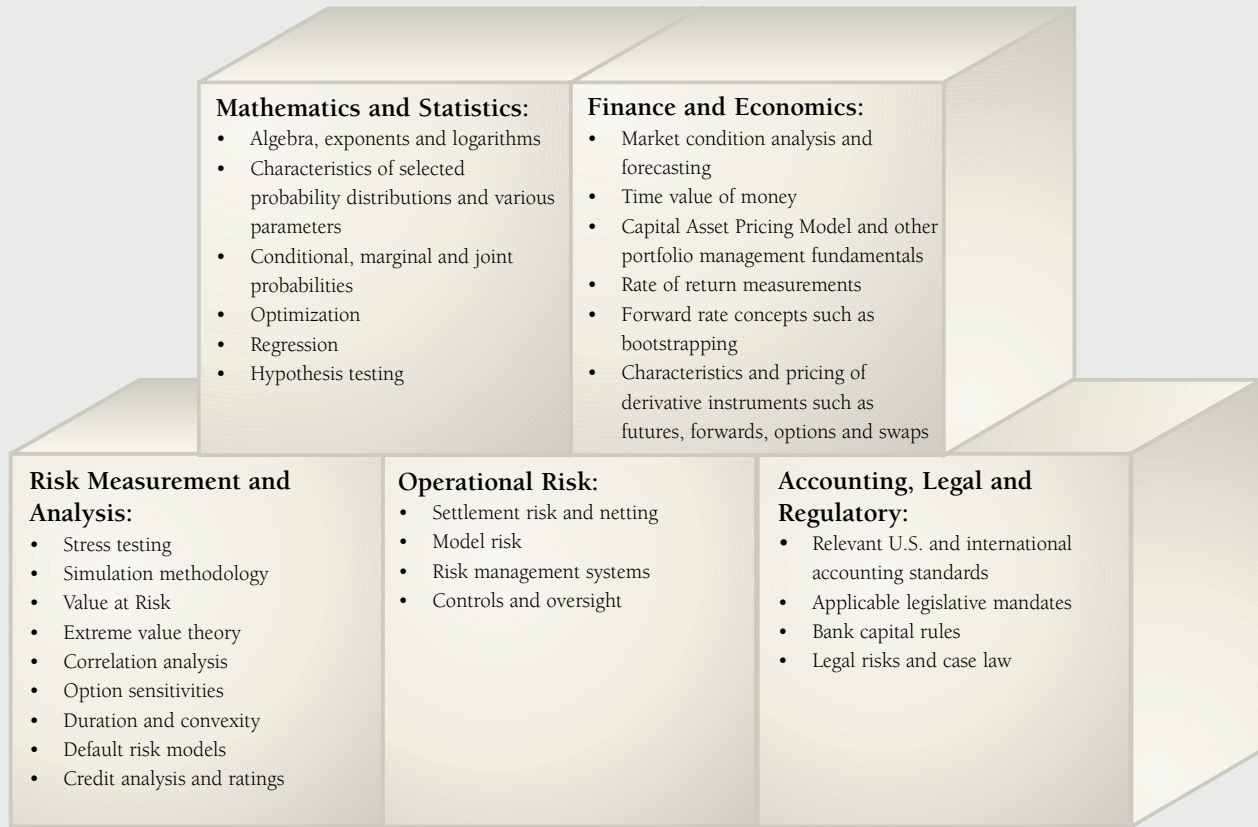
## Various Risk Management Job Categories

Asset Class	Job Functions	Organization	Risk
Commodity	Auditing	Accounting Firm	Accounting
Credit	Back Office Operations	Bank	Credit
Equity	Brokering	Brokerage Firm	Legal and Regulatory
Fixed Income	Credit Analysis	Corporation	Market
Foreign Currency	Compliance	Endowment	Operational
	Model Development	Hedge Fund	
	Portfolio Management	Investment Manager	
	Research	Pension Fund	
	Sales	Regulatory Agency	
	Trader	Tax Authorities	

Source: Susan M. Mangiero



## Risk Management Building Block Concepts



Source: Susan M. Mangiero

left the company or don't remember specific details. Other employees may be uncooperative and refuse to provide information, especially if there's no incentive for them to do otherwise.

Compensation is another big factor. Any firm that pays bonuses for quick fixes to the bottom line without considering the downside is asking for trouble.

E. Daniel Raz, CEO of Analytic Recruiting Inc., describes a risk manager as "someone who can say no to trades without alienating the line staff members who work under

tremendous pressure to meet short-term budgetary goals. A talented risk manager will marry together his or her knowledge of the business, along with financial market expertise, to suggest alternatives that do not violate internal controls, but can boost revenue."

Taken together, this means that a good risk manager is persistent, diplomatic, creative, knowledgeable and thick skinned. Practically speaking, a likely candidate is someone with deal experience who can adopt a longer-term view, or an operations manager with a strong background in applied systems,

and an appreciation for the cost of making mistakes and the benefits of preventing them.

On the technical side, a risk management professional should feel at home working with numbers, but recognize that a quantitative background is not enough. As shown in "Risk Management Building Block Concepts" above, "must know" building block concepts represent a synthesis of myriad disciplines, including mathematics, statistics, finance, accounting, ethics, economics and law.

The exact background required depends on the type

of risk management position desired. Raz classifies positions as falling into one of three categories:

- 1) Risk monitoring and reporting
- 2) Risk measurement methodology
- 3) Risk management

As displayed in "Risk Management Positions and Required Backgrounds" on the next page, the skill level and educational requirements for these groups diverge. Someone working with mortgage-backed securities needs a strong background



## Risk Management Positions and Required Backgrounds

### Risk Monitoring and Reporting



1. Working knowledge of basic math
2. Bachelor's or master's degree
3. Some technical skills
4. Common sense

### Risk Measurement Methodology



1. Ph.D. in a technical discipline (e.g., finance, mathematics, engineering or computer science)
2. Ability to analyze large amounts of data and select suitable methodology

### Risk Management



1. Strong foundation in business
2. M.B.A. and line experience
3. Facility with data analysis tools (e.g., stress testing and scenario analysis)
4. Excellent communication and interpersonal skills

Source: Susan M. Mangiero

in mathematical statistics and econometrics to accurately model prepayment rates and other key characteristics. Pricing options or option-related securities typically requires a solid understanding of stochastic calculus. Someone in operations must be fluent with market rules and settlement procedures.

A good risk manager is intellectually curious about what makes markets tick. This is especially true given the complexity of some transactions and the fact that few securities trade in a vacuum.

What happens in the bond market affects price movement in the equity market. What occurs in Europe affects what happens in the United States and so on.

While this “one global market” idea generally applies to

most finance jobs, it's even more the case with risk management because things can go awry in such a short period of time. Staying abreast of current regulations is certainly a necessary part of the job, but you must also anticipate changes in the financial and regulatory climates.

Modifying systems, adding and training staff, remixing business activities and the like all take time and careful planning. A risk manager has to look past the obvious. Much like a detective, a critical eye is a precursor to successfully evaluating the evidence, identifying the culprit and reinforcing the rules.

Last but not least, common sense is a key element of the work. Knowing how to strike a balance between restricting seemingly profitable but risky business and giving the green

light to other activities requires a solid understanding of company goals and constraints.

It likewise means being able to detect when something fails the “smell test.” Human error is widely thought to be responsible for many of the large and “infamous” derivatives-related losses since their inception. The individual who can reasonably assess the need for a manual override of an otherwise automated process has a chance of preventing mishaps or minimizing damages.

### State of the Profession

The field continues to grow, but anemic economic conditions, consolidation in the financial sector and a perceived oversupply of financial engineering graduates have slowed things for now. But this isn't true for

all of risk management.

For example, the explosive growth in collateralized default obligations has led to a high demand for talented people with excellent credit analysis skills. This trend is unlikely to abate anytime soon given the record levels of bankruptcies today.

Raz encourages candidates just starting out to develop both math and computer skills as a way of distinguishing themselves from the competition. Good writing and presentation skills are similarly important. If few people can understand the results of an analysis, it has limited usefulness. A well-spoken risk manager who can explain complex concepts in simple terms to senior executives, board members, employees, clients, suppliers, shareholders, regula-



tors and the press is invaluable.

[“Learn More” below provides a partial list of Internet resources if you want to read on about this challenging, fast-paced and always changing industry.]

## Going Forward

Most people recognize the need for thoughtful financial decision-making and the existence of reasonable controls. However, those who want to bet


the house may be forced into better behavior with new risk management regulations that go well beyond generalities.

On the accounting front, this includes Statement No. 133, Accounting for Derivative Instruments and Hedging Activities and IAS 39, Financial Instruments: Recognition and Measurement.

The Sarbanes-Oxley Act of 2002 and related U.S.

Securities Exchange Commission announcements regarding off-balance sheet transactions are additional imperatives, along with the new Basel Capital Accord that determines required capital reserves for banks. [See “Issues and Updates” below.]

These developments favorably augur the continued development of the risk management field, and for individuals who

thrive on the challenge, excitement and satisfaction of adding financial value in a meaningful way. 

*Disclaimer: The information provided by this article should not be construed as financial or legal advice. The reader should consult with his or her own advisors.*

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## Issues and Updates

On April 30, 2003, the Financial Accounting Standards Board issued Statement No. 149, Amendment of Statement 133 on Derivative Instruments and Hedging Activities. See [www.fasb.org](http://www.fasb.org) for additional information.

See [www.iasc.org.uk](http://www.iasc.org.uk) for additional information about IAS 39 and the International Accounting Standards Board.

See [www.sec.gov/rules/final/33-8182.htm](http://www.sec.gov/rules/final/33-8182.htm) for the full text of *Disclosure in Management's Discussion and Analysis about Off-Balance Sheet Arrangements and Aggregate Contractual Obligations*.

See [www.bis.org/index.htm](http://www.bis.org/index.htm) for additional information about the new Basel Capital Accord.

## Learn More

Here is a partial list of Web sites that offer additional information on financial risk management.

Analytic Recruiting Inc. — [www.analyticrecruiting.com](http://www.analyticrecruiting.com)

Global Association of Risk Professionals — [www.garp.com](http://www.garp.com)

International Association of Financial Engineers — [www.iafe.org](http://www.iafe.org)

IRMI – Risk Management and Insurance Information Resource — [www.irmi.com](http://www.irmi.com)

Professional Risk Managers International Association — [www.prmia.org](http://www.prmia.org)



Susan M. Mangiero, CFA, FRM, Ph.D., combines many years of hands-on capital markets and risk management analysis with training financial professionals at various money center banks and *Fortune 500* corporations. Her education includes an M.B.A. in finance from New York University, a Ph.D. in finance from the University of Connecticut and post-graduate computational finance work at Carnegie Mellon University. Mangiero is serving her second year as a volunteer member of the FRM® (Financial Risk Manager) committee for the Global Association of Risk Professionals. [derivmail@AFPonline.org](mailto:derivmail@AFPonline.org).