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INTERNATIONAL ASSOCIATION OF FINANCIAL ENGINEERS (IAFE)

"OPERATIONAL RISK AND INSURANCE"

A Report from the Operational Risk Committee

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Summary
The Operational Risk Committee ("The Committee") of the International Association of Financial Engineers ("IAFE") met on May 1, 2003 to explore trends toward a growing interconnection of operational risk management and insurance products in banking and finance. A panel of individuals from the insurance industry and operational risk advisors discussed these developments and related issues.

Greater alignment between operational risk and insurance is being promoted by banking regulations that permit the substitution of tailored insurance coverage for operational risk capital, and increasing application of economic capital to evaluate operational risk performance and exposure. Both regulators and banks are encouraging insurance underwriters to respond with new product offerings designed to provide coverage on an expanded list of operational risk events.

The goal of the session was to create a forum for an exchange of ideas on the relationship between operational risk and insurance, to review issues that are emerging as demand increases for the alignment of these areas, and to promote ongoing discussion of trends in the financial services operational risk and insurance sectors.

Key findings of the discussion include:
1. Operational risk and insurance functions increasingly are working together to build more optimal risk strategies in financial institutions.

2. The growing alignment of operational risk and insurance is being prompted by allowances for the substitution of insurance for operational risk capital under the New Basel Capital Accord and the greater use of economic capital measures and evaluation.

3. The insurance industry is seeing increased demand for new insurance products to cover exposures to operational risk within financial institutions. The demand includes products with significantly broader coverage than traditionally offered, and raises concerns about available capacity within the insurance industry.

4. Demand for innovative insurance products by financial institutions will drive efforts to evaluate operational risks within their own organizations and, it is hoped, will assist with both business unit and peer group benchmarking efforts.

Introduction and Overview

At their May 1, 2003 meeting, the IAFE Operational Risk Committee brought together participants in operational risk and insurance to better understand emerging trends toward a convergence of these functions within financial institutions and the development of new insurance products offering coverage against operational risk events. Banks and investment banks are actively developing their operational risk capabilities, spurred primarily by the New Basel Capital Accord ("Basel II") and the necessity to better manage their business risks. Institutions traditionally purchase operational risk insurance to seek coverage for events that occur frequently and with a generally modest impact. However as operational and enterprise risk management best practices become more prevalent in financial institutions, insurance will play an increased role in mitigating operational risk. Financial institutions are demanding that insurance underwriters begin to develop new products that offer coverage against defined sets of operational risks, particularly catastrophic events that may be difficult to self-insure. Such products place unprecedented demands on the insurers for information on performance benchmarks and losses.

Key Findings

1. Operational risk and insurance functions increasingly are working together to build more optimal risk strategies in financial institutions.

The alignment between operational risk and insurance functions within financial institutions is bringing a better understanding of operational risk issues and mitigants, both internally and externally. Traditional insurance coverage often has been a cost minimization exercise for firms that sought to procure limited protection against a narrow but well-defined set of exposures in a bottom-up approach. With expanding roles for risk officers, insurance programs are more closely tied to firms' overall risk review and mitigation efforts. This follows a top-down perspective that promotes efficient, cost effective use of spending on risk mitigants. Insurance-based risk management strategies create opportunities for risk managers to raise interest in innovative approaches and to add value to firm and business line efforts that seek to conserve risk capital. The recent drive to develop operational risk programs and systems is expanding industry understanding of operational risks and mitigants. As part of efforts to evaluate operational risks, practitioners are examining ways in which to transfer risk through insurance coverages – the classic risk transfer mechanism. But the classes and size of risk transfer being sought extend well beyond traditional insurance products like Directors & Officers or Errors & Omissions policies. Risk officers are becoming equally concerned with high exposure, rare multi-million dollar rogue trading losses and severe business continuity events, and other non-traditional risks heretofore deemed uninsurable such as failure of control losses, that may strain the capital resources and stability of their firms.

Insurance product innovation has many hurdles to surpass in the future. Insurers need to better understand risks to financial institutions and devise more appropriate and tailored product offerings. As part of their review of potential offerings, insurers may choose tom specialize in niche products to meet the needs of financial institutions and, as a result, develop cost effective risk transfer mechanisms.

2. The growing alignment of operational risk and insurance is prompted by allowances for the substitution of insurance for operational risk capital under the New Basel Capital Accord and the greater use of economic capital measures and evaluation.

Recent consultative documents associated with Basel II recommend up to a 20 percent reduction in operational risk capital where appropriate insurance products clearly provide coverage tailored to operational risks. Such a move toward the usage of contingent capital for regulatory purposes, along with the business interest in reducing economic capital charges, raises the bar for insurance products and providers. If a risk officer can introduce cost-effective capital-saving solutions to business managers, he or she will attract considerable interest and demand for such products within his or her institution. The biggest remaining question, however, is if the insurance industry has the capacity and appetite to deliver such products.

The release of the Third Consultative Paper ("CP3") by The Basel Committee on Bank Supervision[1] provides an opportunity for any bank using the Advanced Measurement Approach to recognize the risk mitigating impact of insurance up to 20 percent of its total operational risk requirement. This provision is subject to minimum criteria for an acceptable insurance policy contract, including, but not limited to: the original and remaining term of a policy, a minimum notice period for cancellation/non-renewal, the explicit mapping of insurance to actual operational risk loss exposures and the claims-paying ability of the insurer. Detailed information on acceptable insurance structures, including any coverage "haircuts" that may be applied to policies, will be an important element in the development of operational risk insurance products. Curiously, CP3 is silent on the issue of timeliness and surety of claim payments.

Financial institutions are increasingly looking at economic capital approaches to help manage the allocation of capital. These goals increase the appeal of insurance products that transferring risk in a cost efficient manner. Operational risk officers are well positioned to work with insurance buyers within their institutions in an effort to create an integrated approach to the evaluation of coverage options and capital reducing insurance products.

3. The insurance industry is seeing increased demand for new insurance products to cover exposures to operational risk within financial institutions. The demand includes products with significantly broader coverage than traditionally offered, and raises concerns about available capacity and appetite within the insurance industry.

As firms look toward using insurance products as mitigants to large operational risk exposures, there will be increasing pull on the industry's capacity to offer sufficient coverage to meet demand. We can anticipate possible capacity constraints, particularly as operational risk insurance products emerge from their early stages of development. As demand for insurance products increases, it is hoped that the insurance industry will

[1] CP3, including the press release and overview, was published on April 29, 2003 and can be obtained on the BIS Website at the following URL: http://www.bis.org/bcbs/bcbscp3.htm. Information on The Basel Committee on Bank Supervision is found on the BIS Website at http://www.bis.org/bcbs/aboutbcbs.htm.

attract additional capital to increase its available capacity. However, this will be an outcome that actual practice will need to confirm.

Capital constraints arise from inadequate understanding of operational risks, insufficient hedges available to policy writers, internal limit structures and other factors such as the participation by a limited number of underwriters. Capacity constraints may be compensated for over time by more sophisticated and complete mapping of operational risks, growing maturity and standardization of operational risk products, emergence of innovative methods for transferring risk such as catastrophe bonds, attraction of additional writers of insurance and reinsurance, and spreading of insurance from individual buyers among multiple carriers.

The extensive discussion over the past several years between regulators and the financial community about operational risk has served to provide a commonly understood set of terms with which to describe operational risks, exposures, controls and mitigants. Common terminology helps to promote transparency between practitioners – an important element in a well functioning market. Insurance underwritten against operational risks needs to be described clearly using this common language in terms of coverage, conditions and timing of payouts. Third party pre-underwriting audits can help to clarify coverage at the inception of a policy and limit disputes at such time as claims are made.

Current endeavors are underway in the banking industry to define and categorize operational risks and may go a long way toward providing underwriters with the necessary transparency they need to insure and cover them. However, if the coverages become too narrowly defined, they may ultimately fail to meet the needs of financial institutions. A balance needs to be attained between defining insurable risks and offering coverages for one-off catastrophic events. If the insurers are unable to provide the necessary coverage for such catastrophic events, financial institutions may look elsewhere for risk and capital reducing strategies, such as the capital markets.

4. Demand for innovative insurance products by financial institutions will drive efforts to evaluate operational risks within their own organizations and, it is hoped, will assist with both business unit and peer group benchmarking efforts.

Buyers and sellers of operational risk insurance are developing methods to evaluate and map exposure to operational risks and loss distribution profiles of these risks. These efforts are being conducted at the firm and industry level. By benchmarking the risk profile of a firm against industry norms for a particular risk, an insurer can make reasoned judgments of their own underwriting exposure and appropriate premium levels. Financial regulators will also need to have benchmark data in place to evaluate operational risk insurance coverage under the terms outlined in CP3.

Who will perform this benchmarking exercise? Most major banks are currently collecting internal loss data and accessing external data from service providers, consortiums, or their own efforts. In the future, they are expected to develop more expertise in determining how to use the data in their cost-benefit analysis of insurance coverages.

Insurance firms often avail themselves of claims data, but this data is usually not collected and mapped in a manner consistent with bank industry efforts. Third party data providers currently offer both qualitative and quantitative historical loss data for benchmarking purposes. The panel found it likely that, in the future, insurers will avail themselves of these data sets more regularly in their risk assessments of insured institutions. It is possible that these institutions will provide this data themselves to the insuring institutions as part of the due-diligence process. Ultimately, the increased availability of operational risk loss data will help to establish an insurance buying and underwriting process that is more transparent.

Credit rating agencies are believed to be considering issuing ratings for operational risk analogous to the credit ratings that they currently offer. It is unclear if these ratings will be offered as part of their credit services or as additional operational risk service offerings. The financial services industry – especially in light of recent corporate scandals – has requested operational risk services from the ratings agency as a method for benchmarking their own control environments against those of their competitors. In addition, bank regulators have long issued management ratings that can be viewed as partial operational risk assessments as part of the bank audit process.

Conclusion

The growing alignment of operational risk and insurance functions within financial institutions is being driven by the push from regulators for formal operational risk programs and increasing use of economic capital as a management tool for allocating and evaluating operational risk capital. Operational risk insurance products offer both financial and non-financial firms a vehicle that can transfer operational risks off of their books by providing contingent capital resources against these risks.

With insurance being recognized by regulators as a (limited) substitute for operational risk capital, the demand for tailored insurance products for financial institutions has grown. The relaxation of market constraints – such as a lack of appetite and capacity on the part of insurers – is expected to be aided by a number of factors, including growing data collection and risk mapping efforts by financial institutions and regulators. Risk mapping, assessment and benchmarking techniques provide greater transparency between the underwriters and the insured and are expected to increase the comfort level of both parties. The increased attention to matters of a common language for purposes of data gathering is also expected to help encourage the development of new products that meet the needs of the insurers and the insured.

While there has been considerable progress on these and other issues, there is much work ahead for both the financial services industry and the underwriters. The ability of participants to achieve greater transparency and attract additional capital to operational risk insurance products is a critical element in the development of this sector. Banks are currently demanding large-scale capital mitigation strategies from insurers. It remains unclear if insurers have the capacity or appetite to respond, or can provide products that can respond to losses in a timely and responsible fashion. In addition, there is concern that only a small number of insurers will have the appetite to underwrite this insurance,

and there will be a concentration of resources that will result in an increased risk for the insured in terms of the surety that their claims will be paid. However, it is clear that this topic will generate a great deal of discussion between both insurers and financial institutions in the coming years, and with it, the anticipated innovative product solutions.

Example of an Operational Risk and Insurance Case

Event Description*: Barings PLC.*
Barings PLC, a venerable institution with roots going back 233 years, suffered a catastrophic loss that has become a benchmark for operational risk. The bank had suffered an unthinkable loss in February 1995 of $1.3 billion in this people risk case, and the "hotshot" Singapore-based trader who was responsible eventually pled guilty to two counts of fraud and was sentenced to an eight-year jail term. The $1.3 billion loss was larger than the bank's entire capital base and reserves, and created an extreme liquidity crisis. Barings was forced to declare bankruptcy and was later purchased by the Dutch bank ING for the token amount of one pound, and an agreement to assume the fallen bank's substantial debts.

This event shook the world's financial markets, and ultimately led to an increased awareness on the part of banks, trading houses, and regulatory agencies of inherent operational risks. Nick Leeson, a 28 year-old trader with Baring Futures Singapore, was missing from his desk on February 23, 1995 when senior management in London first realized the magnitude of his losses. Leeson, a trader from a humble background who had emerged as a star in the rough and tumble derivatives world, was given a great deal of latitude by Barings' management. He had worked in Singapore since 1992 and had registered significant profits on Barings' books by betting on the future direction of the Nikkei index.

No one looked very closely at the nature of Leeson's profits - either because derivative trades appeared too exotic to be understood in the early 1990s, or because management was thrilled to register Leeson's gains and did not care to investigate further. What has since become apparent is that Leeson was not a "wonder-kid"; instead of generating substantial profits, he was losing money. Leeson was able to hide these losses in a special account that he controlled. He was violating a central tenet of good operational risk practices: lack of dual controls and checks and balances. He was the acting settlement manager for both the back and front office, and was able to hide his accumulating losses for more than two years.

It is speculated that Leeson was given these dual duties by Barings as a "cost cutting measure." And while Leeson continued with his "charade" he was pulling in over a million dollars in salary and bonus payments annually. By December 1994 with $512 million in losses already under his belt he bet heavily on Tokyo's stock index. When it did not rise as expected, and Japan's post-bubble economy continued on its downward path, Leeson continued to buy Japanese futures contracts. The country was recovering from the devastating Kobe earthquake, and he had bet that the rebuilding effort would

help boost its economy. Instead, Japan's economy continued to head downwards. Over a period of three months Leeson had bought more than 20,000 futures contracts in hopes he would recoup his accumulating losses. Three-quarters of the $1.3 billion that Barings eventually lost can be traced to these trades.

While Leeson is the obvious culprit in this fiasco, Barings' management is also responsible. An internal memo circulated two years before its collapse warned of the dangers involved with having Leeson manage both the front and back office settlement process. The Singapore International Monetary Authority (SIMEX) also cautioned Barings about the inherent dangers of this arrangement. There is no record of the bank having acted on this information - in fact, it continued to finance Leeson's trades. Barings' losses have left the world a noteworthy legacy in the form of "lessons learned" and the emerging attentiveness to operational risk issues. The general sentiment in the banking community is that a Barings type event should happen "never again."

Source: OpVantage First

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The Terms for Use set forth herein are relevant to describing the roles of each of the above named participants.

About the IAFE Operational Risk Committee
Of all the different forms of risk which can affect firms, Operational Risk can be among the most devastating and among the most difficult to anticipate. Operational Risk continues to receive heightened attention among regulators and market participants, further prompting dialogue and debate on the best ways to identify, measure and manage this important risk.

In response to these developments, the IAFE Operational Risk Committee was formed in 2000. Its mission is to promote dialogue among members and the broader risk management community to further understanding, share best practices and promote industry standards regarding Operational Risk. The committee's mandate is to explore Operational Risk in its broadest sense. Examples of potential topics which may be considered by the committee for initiatives include definitional issues, best practices, quantification, indicators, data issues, governance, culture, technology approaches, and the effectiveness of existing controls and the interrelationship of Operational Risk to other forms of risk. The activities of the committee are multi-faceted and are shaped by the interests and energies of its members as guided by its Steering Committee. Specific initiatives include but are not limited to panel discussions, seminars, workshops, white papers, surveys, elearning initiatives and research projects.

Although the proper definition of Operational Risk has often been the subject of past heated debate, there is generally agreement among risk professionals that the definition should, at a minimum, include breakdowns or failures relating to people, internal processes, technology or the consequences of external events. Operational Risk is a broader concept than "operations" or back office risk. It encompasses risk inherent in business activities across the entire firm and, consequently, its losses have the potential to be of much greater magnitude.

The committee includes individuals with a range of backgrounds, including dealers, end-users, industry advisors, operational risk specialists, technologists, regulators, scholars and others. Individuals serve on this committee in their individual capacities as opposed

to representatives of their respective employers or organizational affiliations. Participation and sponsorship of organizations in committee events and activities is open for consideration. Individuals who are interested in becoming part of the Operational Risk Committee or would like to stay informed about their upcoming events should contact the IAFE at (212) 317-7479 or main@iafe.org. For more information please visit http://www.iafe.org/?id=operationalriskcommittee.

About the IAFE

The IAFE is a non-profit, professional society dedicated to fostering the profession of quantitative finance by providing platforms to discuss cutting-edge and pivotal issues in the field. Founded in 1992, the IAFE is composed of individual academics and practitioners from banks, broker dealers, hedge funds, pension funds, asset managers, technology firms, regulators, accounting, consulting and law firms, and universities across the globe.

Through frank discussions of current policy issues, sponsoring programs to educate the financial community and recognizing the outstanding achievements in the field, the IAFE acts as a beacon for the development of quantitative finance. Throughout its history, the IAFE´s pre-eminent leadership has positioned us to respond with savvy to the evolving needs of the financial engineering community. The IAFE´s programs - from our area-specific committees to our monthly panel discussions to the Financial Engineer of the Year Award - are designed to provide our membership with uniquely valuable activities to enhance their work in the field and opportunities to network and socialize with their colleagues. For more information on the IAFE, please visit our web site, www.iafe.org.