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Special Report

## **The Oldest Tale but the Newest Story: Operational Risk and the Evolution of its Measurement under Basel II**

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### **■ Overview**

Operational risk is as old as the banking industry itself and yet, the industry has only recently arrived at a definition of what it is. It had traditionally been defined as all risks other than market, credit and liquidity. In addition, the discipline in the past had been reactive and responsive to risks as they arose, rather than managing operational risk in a pro-active manner. This approach to managing operational risk was focussed on “cost of doing business” exposures which were managed by standard controls designed to reduce the frequency and severity of expected losses. Under this method, major operational losses resulting from processing errors, frauds or accidents were dealt with as they occurred, and stronger risk management policies and procedures were put in place after the event. However, in following such an approach, operational risk management tends to be perfunctory, and provides limited insight into anticipation and prevention of catastrophic losses, as was dramatically illustrated in 1995, with the watershed event of the collapse of Barings. Around the same time that Barings suffered one of the major unauthorized trading debacles of the century, a few international banks that had adopted a Risk Adjusted Return on Capital (RAROC) approach were beginning to realise the need to manage operational risk on a more proactive basis. This need was further accentuated by the greater use of financial mechanisms such as derivatives, which, while reducing some types of risk, such as market risk and interest rate sensitivities, increased others, such as counterparty and documentation risk. It suddenly became urgent for the banks to adopt more pro-active and sophisticated responses to the management of operational risk.

The confluence of the collapse of Barings and the derivatives blow-ups in the mid-1990s was one among several factors that led to the revision of the original 1988 Basel Accord. The Basel Committee proposed in the late 1990s a more risk sensitive treatment for credit risk that will remove the implicit capital buffer for operational risk that had previously existed. The new capital accord (known as Basel II) will, among many other things, require banking organisations to compute an explicit capital charge for operational risk once it is adopted.

Fitch expects financial institutions, in their response to both regulatory and management requirements, to adopt a balanced approach to operational risk. This includes an emphasis on tools and techniques designed to assist the management of a financial institution in the prioritization of its risk budgets and in where to focus its efforts. Fitch expects that sophisticated financial institutions will use the full arsenal of operational risk methodologies and approaches that are currently available on the

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market. A focus on those areas that lend themselves to quantification and measurement of operational risk are an important component of a comprehensive operational risk programme and work to strengthen management efforts. Fitch has always implicitly reviewed operational risk in its credit rating process. However, with the combination of risk measurement advances in the financial industry and new regulatory demands, Fitch is adopting a more formalised and explicit approach to assessing operational risk.

This report examines the progress made by the banking industry in developing methodologies to manage operational risk and reveals Fitch's view of these developments. In its rating analysis of banks, Fitch will be looking for evidence of a clearly articulated definition of operational risk, examining the quality of an organization's structure and operational risk culture, the development of its approach to the identification and assessment of key risks, data collection efforts, and overall approach to operational risk quantification and management. Fitch will also be looking at how financial organisations have integrated these approaches into a logical framework so that they reflect back and inform each other. Ultimately, it is how an organisation implements and adapts best practices to its own unique organisational needs that will reflect the richness and robustness of its operational risk initiatives.

## ■ Definition

A critical first step in the analysis of operational risk is the adoption of a definition. The industry and, ultimately, the global regulators have adopted a narrow and clearly delineated definition of operational risk: For example, Basel II defines it as "The risk of loss resulting from inadequate or failed internal processes, people and systems or external events". This definition includes legal risk, but excludes strategic and reputational risk, as well as the difficult to quantify "indirect losses."

It is important when considering the definition to understand its genesis: it was developed to create clear boundaries between operational risk and other risk types, specifically credit risk, and to reflect the portion of operational risk that can be quantified. However, in Fitch's opinion, the adoption of this definition for measurement purposes does not let institutions "off the hook" from managing reputational and business issues. For example, in the agency's opinion, reputational risk is one of the key hazards for financial services companies, as a good name and brand image are often an important differentiator of long-term performance in an industry which is becoming increasingly

commoditised. Brand management, although difficult to measure and quantify, is of vital importance to a well-managed financial institution. As management responsibilities for operational risk stretch beyond regulatory requirements, institutions may need to adopt definitions for management purposes that are broad enough to encompass the range of risks that it faces and should typically include the risk of both direct (provided for by provisions and capital) and indirect losses (management processes) resulting from inadequate or failed internal processes, people, systems, legal processes and external events.

## ■ Identification

After establishing a specific and working definition, risk identification is the next step in the process for any bank that wants to implement a comprehensive operational risk framework. Banks will need to adopt a variety of approaches to identify risks within their institutions; the following represents a sampling from industry best practices:

- The collection, analysis and mapping of operational risk loss data from internal sources and the determination of loss frequency and severity.
- The use of key risk indicators derived from aggregated internal data and from assigned threshold values which provide a top-level risk profile of the health of an institution.
- Scorecards which provide a means of translating qualitative assessments collected from the business units into quantitative metrics.
- The use of self-assessment methodology that collects internal feedback from employees reflecting risks that reside within the organization.

While the processes adopted will be highly dependent on the size, complexity and organisational structure of the institution, they must be sufficiently robust to capture all the major risks the organisation is exposed to (those which are easy to quantify and those which are not) and must incorporate the use of forward looking factors. It is Fitch's opinion that banks will need to establish a structure that includes the input, support and feedback from senior management and the business units. Some organisations initially work from the top down and begin their risk assessment processes at the highest level of their organisations and push their initiatives downwards to the business units; others start implementation of their programmes at the business

unit level – often with “friendly” business units as their test candidates – and work their way up and across the organisation. Regardless of the approach, it is essential to build a system that is inclusive of all levels of the organization.

### ■ Organisation Structure & Culture

It is important that the operational risk management framework be integrated into the overall organisational structure as part of an enterprise-wide risk management system. The framework should aid and assist business units in meeting their strategic objectives rather than being the objective itself. In order to be effective, an operational risk management framework requires both senior management and business unit buy-in and support. In addition, it is important to create a culture that encourages people to speak freely about the risks that worry them and to expose losses and errors for the good of the organization. The ultimate goal is to establish a fluid “lessons learned” culture that seeks to analyze and learn from the mistakes of the past, rather than hide them from management.

In Fitch’s view, it is also critical how the operational risk team is constituted and where it sits in relation to the overall organisation structure. For example, it is important to have a central oversight team that sets policies and procedures, but it is also important to have a structure that includes “owners” or managers of operational risk at the business unit level. Fitch will also evaluate the effectiveness of an operational risk management framework by judging how integrated the programme is with the overall goals of the organization.

### ■ Data Collection

Once robust processes are in place to identify risks, the next logical progression involves tracking of internal losses within the organisation, linked to standard business and event types. Although internal loss data are one of the most objective risk indicators available, and reflect the unique risk profile of an institution, it is Fitch’s opinion that there are some inherent weaknesses in using only these data as a foundation for risk measurement. Loss data are an important component of an integrated risk framework but they are essentially a reflection of what has happened in the past and needs to be properly analyzed and modelled in order to provide an accurate risk profile for an institution. And, while losses are usually well documented in the case of credit and market risks, loss data for operational risk are still sparse, because until recently, operational risk losses have not been tracked in any consistent manner or documented in any standardised way within the industry. However, it is noted that as the data collection process matures within the industry,

data quality will improve and evolve into a more effective indicator of risk exposure, particularly when assessing high frequency low impact events which characterise a majority of operational risk events in banks. It is also noted that internal data are likely to be inadequate for low frequency, high impact losses as they are less likely to recur within a single institution and will need to be supplemented with scenarios and external loss data in order to capture the full spectrum of probable risk exposures. External data and the use of what-if scenarios can be forward-looking if used as an indicator of potential risks and they become part of a proactive risk management process. However, the use of scenarios, expert opinion and external data needs to be tailored so that they adequately reflect the characteristics of the specific organisation.

Another inherent shortcoming of loss data that needs to be considered is the possibility that, while a bank might be subject to a range of operational risk events, only a few of these may result in actual losses. From an operational risk management perspective, a bank will need to record and understand potential losses and near misses along with the causes and possible consequences of all events. Collection of such information will prove challenging. Another potential problem is the importance of correctly classifying operational risk events – particularly in terms of distinguishing credit and market risk losses from operational risk losses for purposes of quantification. At times, the boundaries between the three risk types are difficult to demarcate precisely and there is substantial overlap. Fitch believes that banks should report overlapping events in the market or credit risk categories for measurement purposes, but should track operational risk loss events nonetheless, as an aid to managing operational risk. As industry practices evolve, Fitch would expect to see a second approach developing which would require risk associated with an “overlapping” event to be allocated to the appropriate credit, market and operational categories. However, it should also be noted that there are problems with both approaches. While the first approach is practical and economical to implement, with less risk of double counting loss events that cross over more than one risk category, there could be significant gaps in the loss database which would inhibit measurement and mitigation of operational risks. The second approach lends itself to a more precise measurement of operational risk, but it is more complex and will require great care.

Fitch believes that the underlying processes and systems used to capture data within an organisation, the quality of the data and the manner in which this data is used, combined with an environment which

encourages the reporting of risks and a robust operational risk culture, are critical in any evaluation of the effectiveness of the data collection process. While recognising inherent problems with data collection procedures, it is the agency's opinion that it is important to start the process now as the quality of data will improve with experience. It is also important to consider the role internal data play in the overall framework of the bank and how it is used to enrich both management and measurement approaches.

### ■ Measurement

The measurement of operational risk – which was once considered impossible – has evolved remarkably during the past few years, and the industry is adopting innovative approaches for creating models that integrate both quantitative and qualitative inputs from data sources, expert opinion, self-assessments and scenario generation exercises. The advancement of this discipline has certainly benefited from Pillar 1 of the new Basel Accord and the evolving guidelines for the measurement and quantification of operational risk capital. In essence, the Committee's suggested three approaches are best understood as attempts to relate a bank's operational risk capital to its: 1) size, in the form of average gross income; 2) shape, in the form of its mix of businesses; and 3) behaviour, in the form of its past record of losses. The Committee's approach also supposes that the appropriate capital charge for a typical bank will diminish, as it takes progressive steps to address operational risk.

The first and simplest, the **basic indicator approach**, is designed for less sophisticated and usually smaller banks. This method will allocate risk capital based on a single indicator of operational risk, which in this case is a multiplier (Alpha) of average gross income earned over a three year period. The Alpha factor is currently set at 15%, reflecting the industry-wide level of required capital for operational risk. The approach is easy to implement as the capital charge is based on a single number and banks do not have to satisfy any specific entry level criteria. This approach, because it results in a higher capital charge than the other two, was designed to provide banks with an incentive to improve their operational risk management practices, develop more advanced quantification methodologies, and hopefully in time, be subject to lower capital charges. It is Fitch's opinion there is not necessarily a clear linkage between the size of a bank's gross income and the size of the operational risk loss that could potentially be incurred. The tie-in with gross income may not be indicative of the risks which a bank is exposed to; it may also fail to account for different operating environments where

gross income is affected by competition, cost bases and tax regimes – factors that would not necessarily lead to differing levels of operational risk.

The second option, the **standardised approach**, takes into account the business lines that make up the institution. The essential principle is that banks will have to map their own business units to a standard set of business units defined by the Basel committee. The approach is two-fold: it allows banks to begin reporting operational risk results in accordance with business lines and fosters the collection of comparable operational risk data. The capital charge calculated is a multiplier (Beta) of average gross income earned by each business unit. The difference with the earlier approach lies in the variability of the Beta factor depending on the business activity conducted. However, such Beta factors may not fully represent all the risk present in the various business lines because of a lack of industry data. It is also possible that, though businesses fall under the same broad category, they are likely to have different risks, depending on their customer and product profiles. The final values for Beta factors are currently being discussed in the industry and may evolve over time to reflect greater risk sensitivity within the business units.

Based on the results of the Quantitative Impact Study (QIS) (field tests conducted by the Basel Committee to assess the impact of the new capital accord), the Committee has given national regulators the option of using the **alternate standard approach** (ASA) instead of the standardised approach. Under the ASA, the operational risk charge is the same as for the standardised approach, except for two business lines: retail banking and commercial banking. These business lines use loans and advances multiplied by a fixed factor as a replacement for gross income as the exposure indicator. This development was negotiated by the industry because the gross income measure produced substantial increases in operational risk charges for banks with high margins. The potential danger with the use of this measure is the discretion given to national regulators, which could penalise banks in countries where they make it compulsory for banks to follow the standardised approach. It is also not clear what the margin thresholds are. Fitch would not expect banks to use this methodology purely to get the benefit of a lower capital charge and would look for compelling reasons which justify the adoption of the alternate standard approach instead of the standardised approach.

The third option, the **advanced measurement approach** (AMA), builds on the business line approach to factor in a bank's record of losses,

which is normally the basis of its expected losses and estimates of future or unexpected losses. As it gives individual banks discretion on the use of internal loss data, banks have the ability to directly influence the operational risk capital charge by collecting and supporting the loss data and specifying the probability and size of the loss. This approach also imposes quantitative and qualitative standards on banks, to ensure the integrity of the operational data collection process. This integration of qualitative assessments, expert opinions, and scenarios with Loss Distribution Models is an example of how a variety of approaches can be included in a single operational risk framework. And the appeal of the AMA approach is that it allows banks to develop their own individual models and methodologies that are most finely tuned to the complexities of their individual organisations.

Defining expected loss (EL) as the average of losses incurred by an institution over a given time frame helps in covering the high frequency low impact events, while unexpected loss (UL) is meant to estimate the “fat tail”, or low frequency high impact events. The AMA requires a bank to calculate its regulatory capital requirement as the sum of expected losses (EL) and unexpected losses (UL), unless the bank can demonstrate that it is adequately capturing EL in its internal business practices by pricing strategies, for example in credit card fraud, or provisioning for high frequency low impact events. If banks following AMA can demonstrate that EL is captured in their existing business practices, no capital will need to be held against EL. It is Fitch’s opinion that as industry practices evolve and the quality of data improves, banks, which can demonstrate that EL is being captured in their existing business practices and is accounted for through provisions, will deserve to be granted additional capital relief. The discretion given to national supervisors to decide whether banks are adequately capturing EL in their existing business practices may itself raise questions of uniform standards and consistency.

Loss data collection forms the basis of the AMA approach. However, as noted above, there are challenges related to data collection and whatever historical data is available tends to be biased towards frequent low impact events. Though the banking industry and the regulators have begun collecting data on operational losses, it is not clear whether they will be in a position to provide sufficient data to take into account the low frequency high impact and even catastrophic events which make up the tail of the loss distribution, without integrating additional, and perhaps more qualitative measures into the models. Several of the leading banks are advocating

the adoption of these approaches. It is Fitch’s opinion that this is the “cutting edge” of operational risk management.

One important issue yet to be resolved when measuring operational risk under AMA is whether capital should be allocated on a group or entity level. The discrete nature of operational risk events, combined with their low correlation across a group, indicate that the total risk facing such a group at the holding company level will be less than the sum of the risks present at lower levels. However, it may be more effective to establish capital requirements on an entity basis, not least because local regulators are responsible for ensuring adequate capital levels of branches or subsidiaries of a multi-national banking group operating in their country.

### ■ Management

Once identified and measured operational risks need to be managed. This can be accomplished by using a variety of techniques, including a close examination of an organisation’s control environment, the development of procedures to measure and implement those controls, and the use of insurance programmes as risk transfer mechanisms. For banks following the AMA approach, the Basel Committee would limit the reduction in capital charge from insurance to 20% of the total operational risk capital charge. Additional conditions stipulated by the regulators, in conjunction with the use of insurance, include a minimum claims paying ability rating of ‘A’, a minimum residual maturity of the policy of one year, a minimum cancellation notice period of 90 days and no exclusions or limitations based upon regulatory action.

Fitch acknowledges that there are issues with adopting insurance as a risk mitigation technique. The first is establishing exactly which risks are covered by the insurance policy; often this will only be resolved by the courts after the event (see the litigation over insurance payouts following the WTC attacks, as an example). In addition, policies will often contain payment caps, and exclusions can be especially germane for long tail events; often events that cause major losses end up as exclusions in future policies. It should also be noted that a potential risk has first to be identified in order to insure against it, although “blanket” policies are available, albeit at a higher cost.

Given the number of outstanding issues, it is Fitch’s opinion that unless a track record of claims and payments for a number of operational events is established, the use of insurance as a means of capital relief will prove to be a great challenge. In addition, the agency thinks overcoming these

challenges will require collaboration between both the banking industry and insurance underwriters.

## ■ Other Material Issues

The bifurcated approach adopted by the US to Basel II, which makes it mandatory for only the largest banking organizations to comply with the accord, has caused the international financial industry to challenge what they perceive as an uneven playing field with large global investment banks. The European Capital Adequacy Directive will require all European financial institutions, including investment banks and asset management firms, to comply with the capital standards stipulated by Basel II. The Securities and Exchange Commission (SEC), the lead regulator for US investment banks and broker dealers, has recently published a set of proposed guidelines for operational risk. However, the guidelines differ from the Basel Committee's proposals. For instance, the SEC's definition of operational risk strips out legal risk and is considerably narrower in other respects than the definition adopted by Basel. Secondly, the SEC is inviting investment banks to comment on the three measurement approaches recommended by the Basel Committee, even though the U.S. federal banking regulators have stated that the top US banks would be required to implement the AMA approach to operational risk. However, the large investment banks, many of which have significant operations in Europe, are in the process of implementing variations of "Basel II-like" approaches as an industry best practice, and are collecting internal data, developing scenarios, executing risk assessments, and allocating regulatory capital based loss distribution models.

Fitch, out of the belief that managing operational risk is a mandatory practice for all financial institutions, expects the banks and investment firms it rates to put in place an effective framework for identifying, assessing and managing operational risk in an integrated manner. This expectation is irrespective of what is required from a regulatory perspective and is considered industry best practice.

Fitch also recognises that while requiring the top global US banks only to comply with Basel II, and to only follow the AMA approach, can create the appearance of an uneven international playing field, the actual situation is considerably more complicated.

In the US regulatory capital system banks are required to maintain adequate leverage ratios, in addition to the Basel risk-based requirements, and these at times can be more binding than the Basel ratios. In addition, all banks are presently subject to regular on-site supervisory examinations, which increasingly include a review of the manner in which banks manage operational risk. That said, to encourage more rigorous management of operational risk among smaller institutions and to enhance the comparability across banking sectors, it may become necessary for U.S. regulators to provide guidance for banks that are not among the entities that will be required to adopt the AMA approach, or the "opt-in" banks, for relating capital to operational risk.

## ■ What is Fitch Doing?

Fitch's adoption of a more formalised approach to analysing operational risk in banks will be aided by an in-depth survey of operational risk management practices in 50 international banks across the globe. This survey will provide the agency with a detailed insight into the progress made by banks in developing an operational risk framework. It is also designed to facilitate the establishment of benchmarks for best practice in operational risk management.

While the survey will help to enhance and refine Fitch's understanding of operational risk management practices, the agency's approach to assessing operational risk in banks will be a balanced one, taking into account both qualitative and a quantitative methods in the management of operational risk. Fitch firmly believes that as the industry evolves, there will no longer be as strong a demarcation between quantitative and qualitative approaches, and they will be integrated into the same models and used to inform and enhance the insight they mutually provide to the operational risk management process.

Fitch also expects the discipline, as it matures, to lead to more consistent identification and monitoring of operational risk. This will, in turn, lead to the establishment of more effective controls and risk mitigation techniques. Each bank must identify all areas of operational risk, including business risk and indirect losses, and develop comprehensive and effective operational risk strategies that are flexible and, ultimately, in the spirit of Basel II evolutionary.

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