

BANKING & CORPORATE FINANCING | BY PETER J. HUGHES AND ALLAN D. GRODY

## Solving the Basel II operational risk conundrum

As John Maynard Keynes once said “The difficulty lies not so much in developing new ideas as in escaping old ones.” Despite almost a decade of intense industry-wide consultation and investment, the operational risk component of Basel II is falling well short of what its founding fathers envisaged when, in its first consultation paper in 1999 (Bank for International Settlements (1999) ‘A New Capital Adequacy Framework’, BIS, Basel), the Basel Committee challenged the industry to; “devote the necessary resources to quantify the level of such (operational) risks and to incorporate them into their assessment of their overall capital adequacy”.

A fairly reliable indicator of where the industry is positioned relative to Basel II is the banks’ response to the regulatory agencies’ implementation plans. Such a process is currently underway in the US relative to the joint agencies’ request for comment on their proposed Basel II supervisory guidance. Consider this recent comment from the Advanced Measurement Approaches Group of the Risk Management Association, which was formed to represent the leading US banks in this area: “Practically speaking, the requirement to produce comprehensive management reports including ‘changes in factors signalling an increased risk of future losses’ cannot be met at this point in time or in the near future. In many instances, operational risk factors that led to a particular event cannot be uniquely determined retrospectively, let alone detecting a change in factors that signals an increase in future losses.”

This statement begs the question, what value does a global risk management and capital adequacy regime have if the banks applying it, by their own admission, are unable ‘at this point in time or in the near future’ to fulfil a requirement as fundamental as being able to demonstrate the link between changes in risk factors and past and likely future negative outcomes? The answer is, without this capability, risk management programs have very little value.

Risk executives are clearly worried. Despite having constructed Basel II Op Risk frameworks at considerable cost they continue to be at a loss to know what their true exposure to this risk really is. Or, put another way, they continue to look for a way to internally calculate their economic capital requirement because the regulatory capital requirement determined in accordance with Basel II Advanced Measurement Approaches is not viewed as a truly representative measure. This in turn means that risk executives do not have a basis on which to convey to their line managers, boards of directors and investors their firm’s appetite for operational risk. Similarly, they do not have a basis on which to approve, communicate and monitor their risk exposures by categories such as geography, business line, type of operational activity, product and risk ratings.

It is not difficult to see how we got into this rather uncomfortable position. The fact is that banks are attempting to bake this particular risk management cake without an essential ingredient. And that ingredient

is ‘exposure’. Banks have not yet found a way of reliably identifying their total portfolio of operational exposures and how to put a consistent and comparable value on them. In the absence of such a direct exposure measurement method the industry has looked to loss history as being the only objective source of information on operational risks. Consequently, advanced measurement approaches under Basel II rely mainly on actuarial modelling techniques applied to loss history to ‘deduce’ the possible current portfolio of operational risk exposures.

This is where the problem lies. A risk management regime that relies mainly on loss history will be fundamentally flawed simply because operational risk exposures fluctuate on a daily basis, often dramatically. Such fluctuations can have many causes – changes in transaction volumes, implementations of new technology, failures of existing technology, business reorganisations, staff absences, a terrorist threat, new products. The list is endless. There are also hidden exposures related to, for example, fraud and control breakdowns. And if risk events do occur, technology and operations managers and personnel invariably swing into action and fix them so they don’t reoccur. The conclusion has to be that historical loss experience is a rather poor indicator of current exposure.

Fresh thinking is needed but first we must understand how we went astray. Ultimately, we simply bypassed the lessons taught by the messy history of credit risk modelling and, instead, started with the mathematical elegance of market risk modelling. In so doing we bypassed a crucial step: the bridging of operational performance to the metrics of risk measurement. Here, we can take a lesson from credit risk modelling.

Credit reporting was born more than 100 years ago, when small retail merchants banded together to trade financial information about their customers. The merchant associations then turned into small credit bureaus, which later consolidated into larger ones with the advent of computerisation.

Credit analysis uses a well defined set of inputs from the historical accumulation of a set of ‘Key Risk Indicators’ gathered over many years of refining intuition into predictors of loss. The following Key Risk Indicators are used today when calculating overall credit scores: payment history 35 percent; amounts owed 30 percent; length of credit history 15 percent; new credit 10 percent; and types of credit used 10 percent.

Armed with this intelligence, specific credit data is used to calculate individual credit scores that, when applied to large and diverse populations, can produce categorisations according to risk criteria such as creditworthiness. If we move over to the commercial side of credit ratings we get a similar history and methodology, this time not from three major credit bureaus but three major credit ratings agencies. Their methods, also refined over a century, associate credit scores into an A - B - C rating system, each with its own assessment methodology, i.e. Key Risk Indicators refined over many years through their correlation ►►

with actual loss experience.

Now, before we use the credit risk modelling as our metaphor for operational risk measurement we must be cognizant of the fact that credit risk, and similarly market risk, already carry value bearing exposures expressed in monetary values. There is no such exposure measure, yet, for operational risk.

A primary reason for failing to arrive at a reasonably useful measure of operational risk exposure is that we have not yet defined the fundamental nature of the measurement unit (or units) of operational risk. We have for all practical purposes deliberately postponed the measurement of operational risk by defining it in terms of a 'qualitative' assessment process rather than a 'quantitative' measurement process. This has left financial institutions to ponder how to link operational loss events to their frequency and severity measures of operational risk. If available (and not much is yet available) then operational risk loss data is rather inelegantly utilized to determine the parameters of a typically poorly articulated operational risk model for calculating the 99.9 percent confidence interval over a one year horizon. We are using our market risk models, specifically our Value-at-Risk models, to model operational risk without any value bearing relationship to operational risk exposure.

Therefore, creating such a value-bearing operational risk metric is of paramount importance. Creating it is relatively simple. First, recognise that operational process is performed around business related functions, all of which have financial implications, whether revenue or expense associated, position value associated, or related to profit or loss. Taken together we suggest that such financial implications be scaled and associated with 'value bands' and the appropriate value band assigned to the operational process. We further offer the basic premise that operational risk is, at its core, the interaction of manual process (human interaction) and applications (computerised processes) around data. In a financial institution, data is at the core of every transaction whereby operation-

al risk increases as the volume and relative complexity of transaction throughput increase. Aligning these three core operational risk elements – process, data and applications – around operating environments comprised of people, technology, facilities, processes and controls provides us the vision to construct a limited number of Key Risk Indicators for operational risk. Taken together, the creation of a value bearing metric along with these Key Risk Indicators, and associating it with monetary loss events gives us the tools to finally measure operational risk. Here we have simply followed the lessons of credit risk, whose predictive models resulted from many years of refining their intuitive Key Risk Indicators into predictors of loss.

What we have constructed is a mechanism to measure operational risk, but one that uses operational metrics to bridge the language barrier between operational performance and operational risk. This similar language translation was a key determinant in the history of credit risk where, along with constant refinement, risk exposures could be correlated with losses. Today, credit risk modelling techniques have evolved to the point where loss predictions of the highest precision can be produced and traced back to the population segment causing these losses, thus permitting remediation in such Key Risk Indicators as credit line, collateral requirement, etc. Here, too, lies the ultimate potential of operational risk, that being risk mitigation not risk measurement. But to get there, as with the lesson of credit risk, we are reminded that "*if you can't measure it, you can't manage it*". Might this be the simple solution to solving the Basel II conundrum? ■

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