

Commensurable v. appropriate

Integrated measurement has become something of a mantra in the risk management field. Unfortunately, this means different things to different people. David Rowe argues that it does not mean that a uniform measure is suitable for detailed monitoring of risk at all levels of an organisation

Any discussion of financial risk measurement must begin with a coherent definition of financial risk itself. I propose the following: "Financial risk is the potential for unexpectedly large losses over some time horizon." In any given context, this obviously begs questions such as "How unlikely is 'unexpected'?" and "How big is 'large'?"

Answers to these questions appropriately start at board level with a broad statement of risk appetite. Such statements should be specific as to the potential loss but may be qualitative as to circumstances. An example for market risk might be: "The logically consistent simultaneous occurrence of separately (but not simultaneously) observed market events should not be allowed to result in losses greater than the legal lending limit of the bank." Such high-level mandates need to be consistent with a target credit rating, which leads directly to the topic of sufficient aggregate capital and its appropriate allocation.

Capital allocation and risk-adjusted returns

Proper capital management requires setting incentives throughout the organisation that reflect both returns and risk. For that purpose it is necessary to have a common commensurable¹ measure that can be applied to all lines of business, no matter how distinctive. The standard measure used for this purpose is the contribution to potential unexpected losses. Anyone who has seen a Raroc or similar system in action, however, knows that estimating such contributions is much more robust in some areas than in others. Often heroic assumptions must be made to derive such estimates for certain business lines.

Some approaches to 'integrated risk measurement' attempt to make this type of fully commensurable metric the basis for detailed risk management of individual business lines and activities. Such an approach supposedly allows risk to be measured, aggregated and managed consistently at all levels of the organisation. I consider this a serious mistake.

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To its great discredit, the world is a complicated place and does not conform eas-



David Rowe is group executive vice-president for risk management at SunGard Trading and Risk Systems
Email: david.rowe@risk.sungard.com

ily to our frequent desire for order and consistency. Effective risk monitoring demands careful attention to the unique characteristics of each activity under review. Choosing, collecting, tracking and monitoring data reflecting these characteristics is the essence of day-to-day risk management. Such data are appropriate risk measures² but they are rarely commensurable in the sense that they can be combined and aggregated across different activities.

This was always true for market and credit risk measurement, but the recent focus on operational risk has driven the point home very forcefully. As pointed out in previous columns in this series, operational risk is fundamentally about more disciplined execution of an organisation's recurring processes.³ Defining, tracking and back-testing key risk indicators is essential to effective process improvement and control. These are, however, inevitably eclectic measures that cannot be directly aggregated.

To be sure, given sufficient operational loss experience, it may eventually be possible to develop statistically reliable relationships between such indicators and the magnitude of potential unexpected losses. As any econometrician knows well, however, structural change is the constant enemy of stable statistical relationships.

In the present era, with rapidly evolving technology, business structures, competitive forces and production processes, precise linkage of key risk indicators to potential unexpected losses will remain tentative at best.

The real value of eclectic but appropriate risk measures is in benchmarking them against the performance of similar indicators in other areas or other organisations and in tracking their performance over time. In the latter use, they often provide invaluable early warnings of increasing risk before losses actually occur.

Not a bad thing

This inability to use unexpected loss as the uniform basis for detailed risk monitoring and control is not a bad thing, it is simply the reflection of a complex reality. Similar circumstances exist in mechanical systems. Consider the cockpit of a commercial jet liner.⁴ The massive array of dials and read-outs provides pilots with data on many relevant conditions: altitude, air speed, GPS location, external temperature, fuel consumption, approaching weather conditions and much more. Surely we would feel much less secure if there was only one dial that read: 'Risk – low-medium-high'.

To be sure, it is desirable to have abnormal readings trigger a warning of danger. In a way, this might be considered such a summary risk indicator. Without the detailed eclectic data, however, there would be no effective way to diagnose the cause of a high-risk indication. The same is true for financial risk systems. There is a need for a generally applicable measure of risk across all areas for capital allocation purposes, and potential unexpected loss serves this purpose. At the day-to-day risk monitoring level, however, eclectic but non-commensurable measures will always play a dominant role. ■

¹ Commensurable, in this sense, can be defined as 'capable of being measured by a common metric'

² Appropriate, in this sense, can be defined as 'suitable for a particular condition, occasion or place'

³ See Risk July 2003, page 50, Risk August 2003, page 47 and Risk October 2003, page 81

⁴ I am indebted to Evan Picoult of Citigroup for this interesting analog to risk information systems