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Risky Stories

by David Ingram

In the end, to have an effect on the world, the mathematical risk models need to be translated into stories.

However, that is troublesome because many risk managers and many of those who listen have never heard such stories before. We are all in new territory.

The risk model is an attempt to see the world in a much more realistic way than ever before. We are trying to look not just at a most likely future, slightly conservative future or even a worst-case future, but to look at the shape of all possible futures. Those my age or older may remember the first time that they saw color TV. The color picture looked strange at first and these new stories of risk models will seem strange at first, but it didn't take long for color TVs to look natural, and it will not take that long for stories from risk models to seem natural either.

There are at least three main ways that stories about risk and risk management need to be different from the old black and white financial information. First, risk and risk management cannot be easily described in absolute terms. They will usually be relative to other risks, usually to other similar risks within the company. When you build your first risk model, the risk and return results will be lonely with no basis for comparison within the company. However, the "efficient frontier" model provides a simple, well-known basis for comparison. Markowitz plotted the returns of stocks and risk-free investments, but you will doubtless find it more useful to compare a new product risk return against a stock bond continuum. Once a second product risk return can also be plotted, the risk manager can be off to the races developing the company's own product-efficient frontier. Thereafter, each additional product can be seen to be either "on the frontier" or under it. The

most profitable product is often not even on the frontier. When that is seen, the real process of understanding the company risk profits begins.

Second, risk, especially as it is found in long-duration, non-traded instruments such as insurance contracts, is multidimensional. Above I spoke as if the risk return graph was two dimensional. Unfortunately, it is not just two dimensional. To communicate the risk of a long-duration, non-traded instrument, a minimum of at least six values are needed. I will call these six values the "Actuarial Risk Profile" (ARP). A sample ARP looks like this:

	Short Term	Long Term
Expected Return	A	B
Volatility	C	D
Tail Risk	E	F

The short-term measures can be earnings-at-risk type statistics and the long-term measures are often taken at several points in time, when it is recognized that risk changes over time. It is also key to remember that discounting may lead to incorrect evaluations of risk for long-term products, which are not easily traded if they are not in excellent condition. These six numbers should be prepared for each major risk type (credit, market, hazard and operations) before and after adjustment for correlation. The volatility measure can simply be the standard deviation or it can be some other measure that captures the middle of the loss distribution. The tail risk measure can be a VaR or CTE type measure.

This multi-dimensional aspect of risk is problematic when the value of risk management is questioned. That question tries to make you fit risk and risk management into a one-dimensional framework. The value of risk management will only be clear if there is a reduction of



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risk for the same return or an increase of return for the same level of risk. More commonly, risk management will mean fine-tuning the risk reward profile, changing both risk and reward to bring a product closer to the efficient frontier. If an organization does not know what they want their risk return profile to look like, risk management would have no more value than a map would have to someone who does not know where they are going.

Third, in communicating risk and risk management, there needs to be an acknowledgement that some unknowns are less certain than others. As Donald Rumsfeld said, “there are known unknowns and unknown unknowns.” When the market puts a value on a security, there is usually a charge for expected volatility. This is the charge for the known unknowns. However, if the market perceives that there are any significant “unknown unknowns” then the risk charge can increase dramatically.

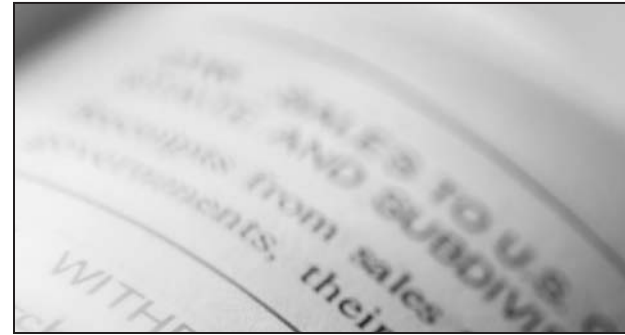
When risk profiles are being compared between products, the risk manager should be able to indicate the degree to which the various product risk models underlying the profiles depend on unknown unknowns. Otherwise, there will usually be an unfair comparison between a well-tested existing product and a new product with

new benefits operating in a new market where some or all of the assumptions are those unknown unknowns. Ultimately, the risk manager needs to make that distinction to maintain credibility.

So these three things make building the risk and risk management stories more of a challenge. The temptation will be there to simplify by ignoring one or more of these three complications when communicating risk and risk management. However, you will doubtless find that re-introducing one of these elements will be even more difficult later. Better to keep the story a little longer from the start.

In fact, these three ideas could be the basis for a full risk report—Part 1: How does the risk return compare among products? Part 2:—What is the Actuarial Risk Profile of the Product? Lastly, Part 3:—How reliable are the assumptions?

Someday, the risk management profession will need to develop a minimum standard for risk management reports. To be both effective and accurate, these are three basic elements that will need to be included. ♦



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