

# Sense of security

Michael Barrett warns that a reliance on risk models offers a false sense of security and encourages a different attitude towards managing risk

**A**wizened old lawyer once said that the only thing harder than winning an argument using the wrong numbers was trying to win the same argument using no numbers. Such a mindset helped give rise to the view that precise quantitative assessments of inherently fuzzy areas like forecasting, polling, and risk modelling was better than having no numbers at all. But no matter how well the risk model is conceived, another saying rings true: “garbage in, garbage out”. As recent events on Wall Street have shown, that “garbage out” can have devastating consequences.

When it comes to modelling risk the problem is not that the financial modellers have built bad models, but rather that they rely upon a degree of precision in their assumptions that is illusory at best. Modellers believe that through estimation, historical analysis, and complex Monte Carlo and other simulations they can divine a number close enough to be, for all practical purposes, ‘exactly correct’. In turn, their models can then produce answers that are ‘exactly correct’. To be fair, such models work in engineering matters where cause and effect are dictated by the immutable laws of physics. They even serve fairly well in other circumstances marked by linear, predictable changes phased in over time because historical precedents can be adjusted for emergent trends to reflect enough of today’s reality to be reliable indicators of tomorrow’s events. Yet it is precisely when radical changes are afoot that accurate assessment of risk is needed the most – and when today’s risk models are of the least value.

If the models otherwise work then why are the right numbers so hard to find? Because they don’t exist; they are unknowable. People, not physics, dictate the myriad decisions made in

the financial markets. Consider today’s global economy, a complex system with millions of participants making instant and collectively interdependent decisions 24 hours a day. Because each decision affects every other decision, no single number can be plugged into the models to reflect, in advance, the changing market sentiment. The correct real-time number to use in the model are simply unknowable.

All these mutually dependent interactions among decision-makers create a cascading effect – when the “mood” of investors goes down so too does their appetite for risk, and each investor’s decisions feed off the others. When this prompts small swings there are often enough risk-takers in the market to buy out the positions of those who got nervous; the nervous are able to exit the market and, if things turn around, the risk-takers are rewarded. But when the number of concerned investors runs beyond a certain point there are too few risk-seekers to buy up those risky positions and the price drops, often dramatically. What’s left has essentially no value because no one is willing to pay much for the unmeasurable risk.

Current risk models fail to warn of such events because they cannot predict how severely the uncertainty will be magnified throughout all the models used by all the players in the system. Because the actual numbers are unknowable the model’s outcome is itself inherently unreliable. The issue is the same in polling for presidential candidates (where it is unknowable who will actually vote) as it is for measuring the risk of terrorism events (with unknowable likelihood any given day for any given target) or for financial and political risks of investments and financing (how much unknowable risk is worth what price?).

If there’s a single silver lining to the storm clouds of today’s financial crisis, it may be that risk managers will learn to not rely on linear predictive models and build a new, better approach to real risk management. A good start would be to look at resiliency management, not risk management, for while certain risk is essentially unknowable, resiliency encompasses the ability of a firm, portfolio or economic system to withstand an assault on its fundamental assumptions – such as that capital will be freely available or the interest rate will remain above or below a given level. Achieving resiliency requires mapping out dependencies and making implicit assumptions explicit, then ensuring redundant and/or flexible systems are in place to deal with any challenges that arise. Most importantly, it requires mapping critical pathways and noting indicators that will provide early warning when critical factors begin to get out of alignment. In practice, resiliency will remain hard to measure because single, easily comparable, cross-industry numerical answers cannot capture the multiple interdependent complexities of the real world. But by focusing less on guessing about individual risks and using more complex, more meaningful, and more predictive approaches to promoting resiliency and heeding the indicators of when things are headed in the wrong direction it is a safe bet that financial and business resiliency managers can achieve a better result than the facile reliance upon risk as reduced to a single number. After all, the outcome couldn’t be much worse.

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