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## **RISK MANAGEMENT: AN EVOLUTION FROM “GUT” TO “QUANT” TO “WISDOM”**

*By Leslie Rahl and Barbara Lucas, Capital Market Risk Advisors*

In the many years we’ve been involved with risk management, we’ve observed a lot of changes. In the eighties and early nineties (a period that seems like the stone age compared to where we are now), risk management was an art, not a science. Risks were managed by “gut,” with many portfolio managers placing enormous reliance on instincts honed by experience in protecting the assets they managed. Later, in the wake of Askin, Long Term Capital and other major debacles, the need for better tools became obvious. Risk management morphed into a science – a quantitative approach based on VaR, tracking error or the use of some other metric. The “quants” became kings of the hill, as investors became enamoured with the need for technical tools to protect their investments from loss.

But just as “gut” isn’t enough, “quant” also has limitations. As recent history shows, while numbers remain important, they no longer can be viewed as sufficient to protect existing clients, or mesmerise target investors. In the risky world that we live in, a world where history always repeats itself but never in predictable ways, a world where technological advances have changed informational flows, a world where regulators are changing the rules of the game and many once common practices can be subject to prosecution, neither art nor science alone is sufficient to do the job. What matters now, we suggest, is a combination approach – a reliance on common sense and good judgment as well as instinct and numbers – in other words, an approach based on the use of “wisdom.”

What exactly is wisdom? In its simplest form, it’s the ability to understand that risks are always changing and that you can’t use a “cookbook” approach to keep yourself out of trouble. Numbers are just a tool. It’s rarely the simplistic question, “what will an up or down 10% move do to my portfolio?” that creates the most useful insight into the risks you are facing. Rather, it’s the more subtle questions that yield the most useful answers:

How well will this portfolio perform under stress?

The crash of 1987?

The interest rate hikes of 1994?

The Mexican Tequila crisis?

The tech bubble?

The Asian Flu?

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What if the correlation between X and Y changes? Correlations between markets and instruments are not only very unstable; they tend to become 1 (or -1) in times of significant stress. Most risk quantification relies on historical data, and, as we have previously stated, the past does not necessarily repeat itself in a predictable way. Effective risk measurement needs to examine both the changing correlation patterns in “normal” times (whatever that means) and the correlation of 1 that seems to reoccur whenever there is a crisis. Stress testing a portfolio to understand its position in normal and crisis environments is crucial to effective risk management.

What risks are presented by leverage? When a particular strategy relies on significant leverage, it’s important to understand how it will be affected if leverage begins to dry up or becomes a lot more expensive.

How will the portfolio perform in times of diminishing leverage?

If dealers increase their haircuts?

If exchanges raise margin levels?

If prime brokers restrict use of credit?

If funding markets dry up?

Stress testing how a portfolio will behave at its “limits” under adverse market conditions coupled with changing haircuts can be an invaluable diagnostic.

Another area of inquiry is what is likely to happen if bid/offer spreads widen dramatically. Some funds prosper in bear markets, others prosper in bull markets, while some prosper in neither or both. Evaluating how a fund has performed in good times versus bad times can provide important insight into how changing market conditions are likely to affect performance.

What about valuation? The fact of the matter is, the methodology used to value complex portfolios has a tremendous effect on the performance of those portfolios. Indeed, for some complex instruments, the variability between valuations based on differing methodologies is greater than the risk of change due to movements in markets. Regulators are well aware of the impact valuations can have on investors and are beginning to scrutinise practices that could be deemed abusive. As government oversight increases, more managers will be called to account for improper valuation.

To understand valuation risk, ask the following questions:

1. Does the fund attempt to mark at midpoint? Longs to bid, shorts to offer? (Standard deviation of returns will be higher in the latter case).

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2. How does the fund use ex-post information to evaluate its pricing?
3. Under what circumstances does the firm adjust a quoted price?
4. How would the fund know if its values conflicted with realised prices?
5. Under what circumstance would a valuation “error” be communicated to the firm’s management and its stakeholders?
6. To what extent do traders have input in the valuation process (i.e., attributing a value to portfolio positions)?
7. Does the firm’s prime broker or administrator separately mark the portfolio? If so, how do the broker and firm reconcile differences, if any?
8. If the firm receives multiple quotes, what process does it use to arrive at the valuation?
9. Does the firm have a threshold at which it investigated off-market transactions? If so, does the firm have a threshold at which it discloses to stakeholders off-market transactions?
10. Does the firm have a valuation committee or designated people who perform the functions of a valuation committee?
11. Do you haircut the price where the holding is large compared to daily volumes?

### **Non-quantitative risks**

A quantitative approach to risk management is only a partial solution. On the one hand, blindly following numbers - for example, by imposing stop losses without an override power - is not effective risk management. In fact, experience shows that reliance on numbers alone, to the exclusion of common sense, is in itself risky behaviour.

On the other hand, numerous risks that asset managers and investors face have nothing to do with numbers. Various “qualitative” risks, many of which can be lumped under “reputational” risk are every bit as important. It’s only when the numbers are coupled with effective compliance policies, organisational checks and balances, a healthy respect for good governance, and a strong fiduciary culture, that risk management can be effective.

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What constitutes good policies and procedures? With the February 2006 deadline for SEC registration looming in the US, many asset management firms are currently asking that question. While thoughtfully prepared written policies and procedures can serve as an excellent tool for preventing various risks, one size doesn't fit all. "Aspirational" policies, reflecting what somebody thinks the SEC wants to hear but not what is actually done, can, in our experience, cause much more harm than good. Policies must be realistic, and must reflect actual practice. This is one of those areas where the perfect is often the enemy of the good. Having policies that aren't followed is worse than not having any.

How about organisational checks and balances? Like all trading organisations, asset management shops need organisational checks and balances, including separate reporting lines and segregation of functions for front, middle and back office personnel.

- Traders and portfolio managers can't "control" books and records without being called to account.
- Independent verification of positions and valuations are essential to avoiding risks.
- Control units - risk, accounting, legal and compliance - must report to the highest feasible level - CEO, CAO, or the like, depending on the firm's size and organisation.
- Independent chief risk managers (CROs) serve an important function. While there appears to be more demand than supply at the moment, a knowledgeable, experienced risk officer can add significantly, not only to the effective management of a fund, but to institutional investors' comfort level.

Independent boards of directors or, in the case of limited partnerships and limited liability companies that don't have boards of directors, advisory boards or committees with some independent members, can serve as a good sounding board or market reality check. By requiring portfolio managers to "explain themselves" to outsiders, many risks can be mitigated.

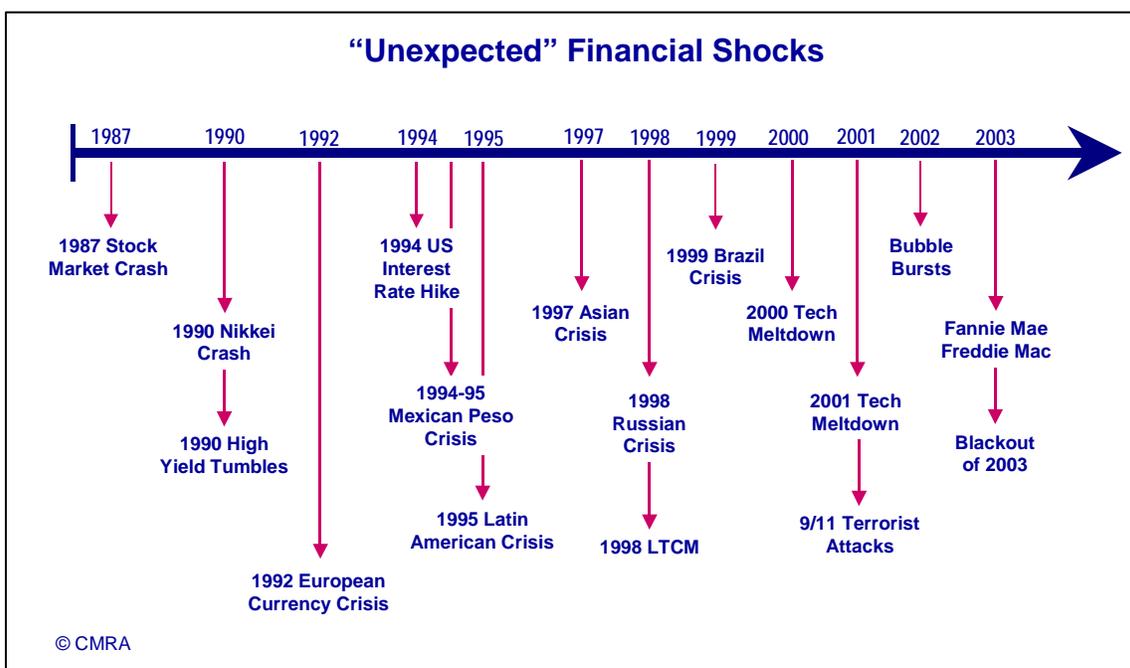
But at the end of the day, organisational bells and whistles are less effective tools than a strong fiduciary culture. Asset managers must teach their people what it means to be a fiduciary. A shop that well-understands the duty of care that it owes, that investors' interests come first, that conflicts must be resolved in the favour of a firm's clients, is a shop that is far less likely to find itself in the headlines for abusing its clients interests, and in terms of reducing risks, nothing could be more important.

### **Lessons learned over the past 15 years**

- Risk is not a four-letter word – risk becomes a problem when it is unintended, misunderstood or uncompensated.

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- 5 You can't make money without taking risk.
  - 5 Risk management is not an exercise to extinguish risk.
  - 5 The goal of risk management is to insure that the balance between risk and reward is in proportion.
  - 5 Only about one-third of an effective risk management program is quantitative.
- Once-in-a-lifetime events seem to occur every few years.
    - 5 There has been at least one 10 standard deviation event in at least one market every year for the past decade.



- 5 Although none of us can accurately predict what will be the next "surprise", risk management needs to assume that there will be surprises.
- Stress testing is at least as important if not more important as VaR (value-at-risk).
    - 5 VaR failed many funds including LTCM in 1998.
  - The interrelationships between market risk and credit risk are complicated and change under stress.

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## 5 Was the Russian crisis a market risk or a credit risk event?

- Not having written policies and procedures is bad practice – having them and not following them can be disastrous.

5 Litigations are rarely swayed because a party didn't have policies and procedures, but can be impacted when they existed but were not followed.

- People who lose money like to blame someone else.

5 No matter how well you run your business, expect problems when things go wrong.

5 Preventative measures should be taken not only to prevent misfortunes, but also to protect yourself from the harsh scrutiny that follows when they do occur.

- Don't agree to guidelines that you can't implement and track.

5 Meaningful limits need to be trackable and actually tracked.

5 Be as specific as you can to avoid multiple interpretations of guidelines.

Risk comes in multiple flavours, both quantitative and qualitative. Don't forget about history but don't expect that the future will be at all like the past. Use your gut, use your quants, use your judgment. In other words, use your wisdom.