



MARKET PERSPECTIVE

Strategic Risk Taking

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Financial institutions looking to revise their risk management processes must consider a more integrated approach that gives traders and risk managers organizational parity.

Better communication and a transparent structure can give the risk department the necessary level of control to effectively manage trading risk yet also enhance profit, elevating the risk management function to one of crucial, strategic importance.

Executive summary:

The credit market is currently at a standstill, ratings are plummeting and the stock markets are experiencing extreme volatility, fuelled by the fear of a deepening crisis. Meanwhile central bankers are grappling with the conundrum of managing the underlying economy whilst somehow restoring market confidence as national governments continue to debate just how extensive their bailout packages should be.

A failure to implement robust risk management practices has been cited as a principal cause of the current conditions and as financial institutions retreat to the relative safety of the boardroom to consider a new approach to risk management, one age-old issue has been pushed to the forefront of the debate – just how much control should be awarded to the risk management division?

This issue has created a tension that is rarely resolved within financial institutions – traders see risk departments as “business prevention units”, yet a failure to give risk managers the authority needed to ensure more control renders them dangerously ineffective. What is needed is an integrated approach that has traders and risk managers working from the same base, where each is able to understand the logic behind the actions of the other.

If implemented effectively, such a strategy will not only bring greater transparency to the ‘limits’ process but also engender a greater level of co-operation between traders and risk managers and reinvent the risk management function as an effective profit center.

A long-ignored tension:

Recent events within the capital markets have highlighted a long ignored tension within risk management. As credit deteriorates, markets make huge jumps on scant rumors and central bankers try paradoxically to balance their wider economic remit with restoring capital markets’ confidence. The age old question has arisen - how much control over the central capital markets business should the risk division of that institution hold?

Clearly there is a need for risk controls to be established and for the trading units to conform to these controls but this truism can mask the less immediate and deeper problem of evaluating and controlling strategic and systemic vulnerabilities.

Traditionally there have been two schools of thought with regard to risk ‘management’. The first, let’s call it the “risk appetite” approach, is that a risk control group monitors risks taken by the organization and communicates these upwards through a series of periodical risk reports based on a number of risk sensitivities. Such measures typically include:

- Basis point sensitivity to various underlying risk factors
- Value at Risk (VaR) calculations across the entire book
- Historic scenario reruns

The recipients of such reports would determine whether the indicated risks were consistent with the institution’s risk tolerance. Often the sensitivity measures would be monitored with special care as these would give an idea of the leverage against the market. The VaR numbers would often be calculated to fulfill a regulatory

requirement and not be put into historical context. Consequently they have had little or no specific relevance to the immediate situation in the market. In most cases, forward looking risk measures are compared to a unit's financial performance to obtain a measure of the risk/reward relationship.

The second school of thought, let's call it the "micro control" approach, is to establish strict risk limits against the measures detailed above and to enforce a limit checking protocol on the traders, with a view to managing risk on an exception basis. That is to say that only when limit breaches occur are the positions leading to those excesses examined in detail.

Establishing a strategic approach to risk:

There are problems with both of these approaches and those need to be examined when considering how to establish a truly strategic approach to risk at any institution.

For the traditional risk management approaches there are issues with the risk measures being myopic both in scope and over time. Specifically:

- Basis point sensitivities are relevant only over a short time horizon. Such measures are useful for predicting day to day P&L but they fail to take into account the high level of nonlinearity prevalent in a wide range of structured products. The common result is short term 'passing' of sensitivity limit checks, whilst nothing addresses the potential toxicity of significant break points in the value of the structure. To some degree these can be captured in VaR calculations.
- VaR measures are designed to show a specific result, namely the minimum loss that should be expected within the timeframe implied by the percentile used (i.e. 99% read as one trading day in a hundred). These calculations do not attempt to measure extreme shocks. Rather, using volatilities and correlations calculated from past market movements, VaR estimates a singular risk number. In no way does this utilize or build in market expectations. As a result, VaR is least effective, on its own, during a turbulent market.
- Historic simulations suffer from the same issue as outlined above. Running situational scenarios revolving around a market crash in a situation following a fall,

without looking at the current pricing measures and ratios, will clearly lead to risk measurement inconsistencies.

The risk appetite approach is problematic in that characterizing risk in turbulent markets based on past returns is inherently unreliable. In addition, focusing on risk/return performance measures can lead to a build up of risk that is justified by corresponding profits when markets are favorable. There are also structural problems with daily risk reporting. If a trader is tasked with making a specified profit whilst knowing that overnight positions are under constant scrutiny, then an understandable consequence is a large increase in intraday risk that is closed out at the end of the day. This is unlikely to be the intended result of a more robust approach to institutional risk policy.

Setting limits in a vacuum can also lead to problems if the limits are created using the normalized data discussed above. Not only can this inhibit the firm from positioning portfolios in accordance with expected market conditions, it can also increase the tension between traditional risk management and trading activities, creating a cynicism among those traders that think of risk management as the "business prevention unit."

Integrated risk management:

The alternative is a more integrated approach to risk management. This means going beyond risk measurement (overnight runs producing risk reports for next day scrutiny) and risk monitoring (calculating risk numbers to handle breaches to pre-set risk limits) and moving to a more holistic form of active risk management.

There should be additional scenarios alongside traditional risk measures within the standard package of reports. These should be scenarios based around the expected market behavior from an in-house prospective. Accompanying the main predictive scenario should be further scenarios which effectively calibrate the possible effects prediction error. These could be modeled as a central scenario in each risk factor as well as parallel shifts moving away in both directions from that scenario. This could then be considered as the path against which portfolios should be positioned and profitable, whilst the upside and downside of being wrong in the prediction

are also examined and evaluated against the calibration of the firm's conservatism.

This approach will reset the base case risk in accordance with the internal market expectation and to measure risk-taking against it. There are two main effects of this: Firstly the traders and risk management teams are working from the same base case. The second effect, which is often overlooked, is that the desk heads and trading managers can have an active view into the '*risk taking*' of the traders rather than just the downside risk. This would enable trading managers to ensure that portfolios were positioned to profit within the '*risk corridor*' for each risk factor. This last point essentially reinvigorates the risk system as one that enhances P&L rather than merely neutralizing it.

It is also important to include '*time*' in the scenarios and to ensure that movements from the expected positions are understood. The reason for this is that profits should be sought and risks measured within the corridor, and the impact of getting it wrong by varying amounts has to be known, particularly where structured products are employed and the impact of nonlinearity has to be assessed.

The risk corridor:

Once such a risk corridor has been established, both the trading and risk teams need intraday access to the outputs and both need to be active in managing the risk. This means that where certain risk factors breach the corridor, the investigation should be immediate and the first step should be to establish whether the breach is inadvertent (i.e. a volatility change due to an ATM change which in turn is due to a yield curve change). It could then be a risk management role to determine a

hedge that protects against the offending risk factor but keeps the intended risk factor exposure intact.

When the above scenarios have been run, the rest of the standard risk measures should also be generated, as these do have value when contextualized correctly. Now, however, they can be understood against the backdrop of the expected returns and investment objectives. This should lead to clearly understood risk reporting within the firm and clearly communicated risk policies to the trading desks.

It should be made clear that rebasing the risk policy in accordance with a turbulent world will take an effort of will and requires scalable tools which can provide intraday risk numbers in a timely manner. There also needs to be an infrastructure providing both risk managers and traders with access to the results. And, if addressed correctly, the benefits should include:

- **Transparency in risk numbers**
- **Transparency in risk limits**
- **Co-operation between risk and trading divisions**
- **Decreased incentive to take large intra-day positions to increase profit**
- **Level playing field between risk and profit actors in the firm**
- **A risk system that actively serves as a profit center**

The importance of these benefits cannot be overstated. By having traders and risk managers co-operating within a shared environment, the adversarial aspects of this relationship between front and middle-office desks can be eliminated. In a global market rife with uncertainty and fuelled by volatility, this is a crucial objective for every financial institution and one that surely justifies the investment and effort of all involved.

About Adaptiv

SunGard's Adaptiv provides enterprise-wide credit and market risk management and operations solutions for financial services institutions. Adaptiv assists institutions of varying size and complexity to deploy technology to meet both internal and regulatory requirements for risk management and operational control. Adaptiv helps financial services institutions from the banking, hedge fund, asset management, insurance and corporate sectors with our deep understanding of risk management and operational processes. Visit www.sungard.com/adaptiv

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