

BASEL III AND SYSTEMIC RISK

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MESSAGE FROM THE CEO



As we start 2011, we see signs of a continued global recovery. While there are still concerns regarding European debt, key economies, including those in emerging markets are showing strength. This is a market that presents unique opportunities that benefit those who can react rapidly. It is also a market that presents many challenges. Changes to OTC valuation practices, central clearing, Solvency II, Basel III and other regulatory initiatives all require a significant focus on analytics and technology and are expensive and time consuming to implement. This is an environment where Quantifi provides even more value to our clients by providing tools that deal smoothly with these challenges and allow them to focus on and respond immediately to market opportunities as well as risks.

The last year has been a busy and exciting one for Quantifi with significant new product initiatives and success in new markets. In 2010 we launched a new suite of solutions addressing counterparty credit risk – a key issue for banks and larger buy side institutions. These solutions received immediate market pickup and industry accolades with licensing by WestLB and winning of a 2010 Credit Technology Innovation award. That year we also were the first vendor to release support for dual-curve interest rate valuation – reflecting the profound changes occurring in OTC derivatives valuation. Right now we are in the process of rolling out QX (Version 10.0) which has many significant new features and enhancements. These releases clearly demonstrate our continued commitment to innovation.

Another highlight over the last year has been our expanded client base. We added our first clients in France, Hong Kong, and Singapore. I was delighted to welcome BTG Pactual, WestLB, OFI Asset Management, StormHarbour Securities, Oracle Capital, Pine River Capital, ARAM Global and among many others to our list of clients.

We look forward to 2011 as a year of opportunities as well as challenges for the OTC markets. I believe Quantifi is well positioned to help our clients in these evolving markets and look forward to working closely with them and supporting their success.

ROHAN DOUGLAS, Founder and CEO

NEWS

Client News:

Channel Capital Selects Quantifi Risk

In response to growing business demands, Channel Capital was seeking a platform that could scale with the firm's growth in terms of volume and product range and deliver timely trade processing, valuations and comprehensive risk analysis. "Our decision to choose Quantifi Risk was based on its relatively short implementation time, ease of use and broad functionality." commented Brian Naini, Chief Risk Officer and Partner at Channel Capital.

WestLB Selects Quantifi CVA

WestLB was looking for a fast, flexible and intuitive CVA solution to competitively and accurately price CVAs in near real-time. Quantifi CVA proved to be the ideal solution, as the semi-analytic models deliver superior performance without compromising accuracy.

Product News:

Quantifi Releases QX

Version 10.0 delivers enhanced scalability, groundbreaking performance and key improvements in complex OTC valuation and Counterparty Risk Management. It also provides significantly broader asset coverage including Hybrids.

Quantifi Releases Next Generation Yield Curve Construction

Quantifi is first to market with a sophisticated and comprehensive set of yield curve-building functionality to support the latest best practice of 'Double-Curve' interest rate valuation.

Quantifi Develops Cutting-Edge CVA and Counterparty Risk Solutions

Quantifi CVA captures all relevant drivers of the exposure, including correlations and volatilities. Quantifi Counterparty Risk enables firms to proactively manage counterparty and market risk and effectively address CVA accounting requirements and evolving regulatory capital standards.

Q&A

An Interview with John Burkert Managing Partner at Tiden Capital



What is your area of business and principal activities?

Tiden Capital is a private investment company with over \$100 million in assets under management. The firm is focused on relative value and corporate structured credit opportunities, including CDS and CDS index tranche products.

At the time when you were looking at solutions, what was the primary business challenge you were looking to address?

When we launched our strategy in early 2000's we developed an internal system to process trades and run risk aggregation. However, as the firm expanded we realised the limitation of our internal systems. With these limitations in mind we decided to partner with a 3rd party vendor that could provide us with the necessary solutions to run our complex investment strategy and ultimately help drive growth.

What were you looking for in a vendor solution?

We looked at numerous vendors, but Quantifi was the only vendor who could provide everything we needed. We required a system that could look at individual trades, model the underlying portfolio and aggregate the risk on those trades.

Why did you decide to work with Quantifi?

Quantifi Risk was the perfect turnkey solution. It is simple, sophisticated and supports a range of financial products from vanilla instruments to complex structured products, while requiring minimal internal infrastructure and internal resource. Furthermore, Quantifi Risk has an intuitive user interface, something that our internal system lacked. Quantifi was the obvious choice.

How has Quantifi helped Tiden?

Quantifi has helped Tiden become highly efficient by scaling and growing with minimal further investment in money and resources. Tiden has saved more than

\$1.7MM over the years and we no longer needed to hire an additional two resources that were going to be required to continue the development and maintenance of our in-house system, which was eventually replaced by Quantifi Risk.

A further key benefit for Tiden is the ability to keep pace with the changing credit landscape. The Quantifi team is dedicated to making sure that models are updated to reflect both market shifts and the firm's evolving strategy. With the move toward the standardised North American CDS contract (SNAC), Quantifi was the first vendor to develop and release SNAC support, which Tiden immediately adopted. Furthermore, we now have in place a scalable and flexible risk platform that is intuitive to use and maintain which gives our investors and prospective investors confidence.

How have you found your experience working with Quantifi?

A key highlight of our relationship with Quantifi is the sheer level of support the firm provides to us. We view the Quantifi team as an extension of our own in-house team. They're quick to respond and have turned around ad hoc requests within 24 hours. We've

“ Tiden has saved more than \$1.7MM over the years ”

maintained a long and successful partnership with Quantifi and are looking to further expand our work with them as a result of the widespread benefits we've experienced. ■

Tiden Capital's Implementation of Quantifi Risk Wins American Financial Technology Award



BASEL III AND SYSTEMIC RISK

by **DAVID KELLY**, Director of Credit at Quantifi

One of the key shortcomings of the first two Basel Accords is that they approached the solvency of each institution independently. The recent crisis highlighted the additional 'systemic' risk that the failure of one large institution could cause the failure of one or more of its counterparties, which could trigger a chain reaction.

Basel III addresses this issue in two ways – 1) by significantly increasing capital buffers for risks related to the interconnectedness of the major dealers and 2) incentivising institutions to reduce counterparty risk through clearing and active management (hedging). Since Basel III may not explicitly state how some of the new provisions address systemic risk, some analysis is necessary.

Basel III Provisions

Basel III substantially raises the amount and quality of core Tier 1 capital from 2% to 7%, plus an additional countercyclical buffer of up to 2.5% and a discretionary surcharge for 'systemically important' institutions, i.e., the big dealers. It also fixes known mispricing of securitisation risks, which is very important given the fundamental role of securitisation in the global banking system. Another key innovation is the inherent recognition that the risk-weighted capital ratio alone is not sufficient. Basel III supplements the capital model with a leverage ratio and liquidity requirements. Each of these enhancements has a systemic risk management objective.

Restricting the leverage of major dealers is clearly important from a systemic risk perspective. Basel III

adds a minimum Tier 1 balance sheet leverage ratio of 3%, subject to further calibration. There are two reasons for this addition. First, countries that imposed a leverage ratio, e.g., Canada, seemed to fare better during the crisis. Second, the leverage ratio serves as a form of safety net for the capital ratio, which is vulnerable to arbitrage in both the numerator (capital) and denominator (risk-weighted assets).

In addition to the leverage ratio, Basel III introduces a short-term liquidity coverage ratio and a longer term net stable funding ratio, designed to address the duration mismatches in bank assets and liabilities. Banks fund a substantial portion of assets in the repo markets and when these markets froze due to declining mark-to-market collateral values, inter-bank lending also dried up causing systemic shocks. The link between liquidity and leverage amplified these shocks. This linkage comes from widening haircuts on repo collateral, which banks must fund with their own capital. Ultimately, these liquidity requirements are intended to prevent another 'run' on the shadow banking system and global seize-up of credit.

One of the critical sources of liquidity risk came from short-term funding of securitised assets in the repo

markets, a practice that banks had ramped up to take advantage of regulatory arbitrages. Basel I and II under-priced risk weights for securitisations allowing banks to increase leverage (and returns). They further increased leverage by manufacturing additional super senior collateral through re-securitisation (e.g., CDO-squareds). The fact that Basel made no distinction for re-securitisations encouraged this activity. Banks also moved securitised assets from the banking book to the trading book to access the more favourable capital treatment. Basel III (II ½) firmly addresses all of these regulatory arbitrages while providing a detailed 'carve out' for dealers with sufficiently robust risk management processes.

Along with the supplemental leverage and liquidity measures, the core capital model has been enhanced to address systemic risks more effectively. Capital models typically involve (Monte Carlo) simulations of future market scenarios using historical volatilities for the relevant market factors. An obvious weakness is that volatility tends to go down in normal (stable) times, resulting in lower capital reserves. Correlations also tend to be under-estimated during normal times. Conversely, when volatilities and correlations spike during a crisis, banks are forced to raise capital and deleverage as credit markets tighten. Basel III attempts to mitigate this 'procyclicality' through new capital charges for 'stressed' CVA VaR and correlation between financial intermediaries, which are expected to more than triple counterparty risk capital.

With the dramatic capital increases, Basel III incentivises banks to actively manage (hedge) counterparty risk. Many larger banks already hedge a significant portion of counterparty risk through central CVA desks and there appears to be general consensus and movement towards this model, accelerated by Basel III (and the desire to reduce earnings volatility). However, there are immense operational and practical challenges in setting up a CVA desk. The main operational challenges involve gathering position and market data and implementing scalable technology with robust CVA analytics. Some of the practical issues are illiquidity of many names, managing residual correlation and basis risks, and handling of DVA. DVA represents a gain (that can never be realised) based on the credit quality of the trader's own institution and can't be hedged with CDS.

Clearly, the best hedge for counterparty risk is collateral. While dealers typically have margin agreements between them, central clearing standardises the process and enforces tighter controls

around collateral risks and re-hypothecation. Clearing also helps immunise the system from the failure of any one big bank. Basel III assigns a minimal (1-3%) risk weight for cleared transactions, thereby fostering central clearing and the systemic benefits.

Conclusions

Whereas Basel III represents progress, there are several ongoing challenges. The first set of challenges has to do with the regulation itself. The timeline provides for a phased implementation period extending out to 2019. Another crisis could certainly occur within that time. While quantitative studies have shown limited impact of the higher capital requirements on the real economy, banks may choose to curtail or exit certain lending businesses if the returns are too low. A consequence could be the expansion of the unregulated and relatively opaque sector of the shadow banking system to fill the credit gap.

“With the dramatic capital increases, Basel III incentivises banks to actively manage (hedge) counterparty risk.”

The second set of challenges is structural. Banks are moving toward active management of counterparty risk. However, there is limited or no liquidity in CDS contracts needed to hedge a significant number of counterparties and institutions will continue to manage a substantial portion of counterparty credit risk through traditional reserves and exposure limits. The residual counterparty risk portfolio is essentially a pool of loans and therefore fraught with the complexities of CDO structures. These complexities include model specification and configuration, manipulating large and diverse sets of position and market data, and managing unhedgeable correlation and basis risks. Therefore, counterparty risk portfolios will continue to be susceptible to large unexpected losses.

Another structural issue is related to clearing. While the near zero risk weight encourages dealers to clear CDS and other hedge transactions, not all products will be cleared, which means a critical mass of bilateral counterparty risk will likely remain in the system. Clearinghouses may also specialise in specific products, potentially increasing net counterparty risk. Finally, a clearinghouse could conceivably fail and there is no evidence that the 1-3% risk weighting will provide an adequate capital cushion to contain the systemic fallout. ■

Accounting for the Changes in Valuation

by **PETER DECREM**, Director of Rates at Quantifi
and **DENISE SOTTILARE**, Controller at Quantifi

In the aftermath of the credit crisis, credit spreads soared to unprecedented heights. Basis spreads between three-month Libor and six-month Libor, for example, went from fractions of a basis point (where they had been quoted for decades) to double digits in a matter of months. These changes have severe accounting implications.

Valuation Implications

The changes in the market environment have far reaching implications for the valuation of all derivative contracts. Classical no-arbitrage principles that formed the basis of all derivatives pricing no longer hold. For instance, before the credit crunch, one could safely combine a 3x6 forward rate agreement together with a 6x9 FRA to create a 3x9 rate (with an almost negligible adjustment). This is no longer the case as the basis between rates widened considerably reflecting that the 3x9 FRA contains different credit risk than the combined 3x6 and 6x9 FRAs.

The market now recognises that Libor has a credit component. Valuations based on a single curve have been replaced with a multi-curve approach which separates the curve used for cash flow generation

from the curve used for discounting. This change effects valuations of all derivatives from the simplest swap to the most complex exotic. It also affects the difference in valuations between collateralised and uncollateralised transactions.

FAS 133

The Financial Accounting Standards Board's FAS 133 first requires that all derivatives be recognised on the balance sheet as assets or liabilities and that they all are valued at Fair Market Value (FMV). Most firms use the Fair Value Hedge method as the accounting treatment for derivatives associated with liabilities.

Fair Value Hedges need to be subject to effectiveness tests and the change in market practice and valuation methodologies need to be reflected in those tests. For a derivative not designated as a hedging instrument, the gain or loss is recognised in earnings in the period of change. Consequently, neglecting to update valuation methodologies to market standard may create significant potential earnings volatility.

FAS 157

FAS 157 defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles (GAAP), and expands disclosures about fair value measurements.



Changes to Current Practice

The changes to current practice resulting from the application of this Statement relate to the definition of fair value, the methods used to measure fair value, and the expanded disclosures about fair value measurements.

The definition of fair value retains the exchange price notion established in earlier definitions of fair value. This Statement clarifies that the exchange price is the price in an orderly transaction between market participants to sell the asset or transfer the liability in the market in which the reporting entity would transact for the asset or liability the principal or most advantageous market.

The Statement emphasises that fair value is a market-based measurement, not an entity-specific measurement. Therefore, a fair value measurement should be determined based on the assumptions that market participants would use in pricing the asset or liability.

IAS 39, IFRS 9

The International Accounting Standards Board (IASB) issued IAS 39 in 2004 and issued its replacement IFRS 9 in 2009; this statement is mandatory starting January 01 2013, even early adaption is permitted. These

accounting rules are very similar to FAS 133 and FAS 157.

Similarly to the FASB regulations the fair value method required that, changes in valuations between the date on which a hedge was established and the valuation date need to be computed. These valuations include a credit component requiring different curves for cash flow generation and valuation.

“The changes in the market environment have far reaching implications for the valuation of all derivative contracts.”

Conclusion

The new multi-curve interest rate curve paradigm has a significant impact on the value of all derivative transactions. In order to comply with FASB 133/157, ISA 39, and IFRS 9 compliance this new valuation methodology needs to be implemented and accounting valuations have to reflect this new market standard. ■

New Website

Quantifi recently launched its newly designed corporate website to reflect the growth and breadth of its solutions and services. The new website captures the scope of Quantifi by showcasing our award-winning solutions, high-performance technology, asset coverage, and leadership team in a simple and usable format.

The website incorporates Quantifi's new corporate brand identity which has been designed to convey a strong impression of our core principles – Lead, Innovate, Deliver, and Serve. This new brand has also been consistently applied to our corporate logo, product naming conventions and collateral.



www.quantifisolutions.com

Whitepaper

Evolution of Counterparty Credit Risk

Request a copy:
enquire@quantifisolutions.com



ABOUT QUANTIFI

Quantifi is a leading provider of analytics, trading and risk management software for the Global Capital Markets. Our suite of integrated pre and post-trade solutions allow market participants to better value, trade and risk manage their exposures and respond more effectively to changing market conditions.

Founded in 2002, Quantifi has over 120 top-tier clients including five of the six largest global banks, two of the three largest asset managers, leading hedge funds, insurance companies, pension funds and other financial institutions across 15 countries.

Renowned for our client focus, depth of experience and commitment to innovation, Quantifi is consistently first-to-market with intuitive, award-winning solutions.

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Quantifi Releases QX

Version 10.0 satisfies OTC market demand for counterparty risk management and regulatory compliance. It includes significant enhancements to product coverage, functionality and usability including:

- Fourth generation counterparty risk management with market leading performance based on the fastest, most accurate Monte Carlo engine available
- Significantly expanded asset coverage including Hybrid products
- SABR rate volatility modelling with managed-cost for complex rate derivatives
- Dual-curve/collateral-adjusted interest rate risk management
- Enhanced flow trading support including Eurodollar Packs and Bundles
- Simplified operations with improved time-cohesive corporate action processing
- Continued usability enhancements including a rebranded user interface
- Security improvements including support for SQL Server Windows Authentication

Recent Awards

Quantifi Risk - Best Risk Analytics Initiative



Quantifi CVA - Credit Technology Innovation Award

