Thought Leadership in Risk Management

HENRY STEWART PUBLICATIONS

Journal of Risk Management in Financial Institutions

Financial InterGroup

www.financialintergroup.com

A compendium of JRMFI published editorials, commentary and book reviews authored by FIG principals*

* Copyright permission courtesy Henry Stewart Publications

2008 Vol 2, 1

Editorial: The financial crisis and operational risk management: Unfinished business

Regulators have always fostered an expectation that capital is what sustains banks in periods of stress and prevents them from failing. In the midst of the present financial crisis, it is perhaps more appropriate to view the capital reserves that banks are forced to hold as the ruler by which an organisation counts down to failure rather than the system that proactively prevents it.

So, if it isn't capital, what does offer banks the greatest protection against failure? Quite simply, it is the risk culture embedded in its people and processes. At the core of any risk culture are (1) the incentives for individual compensation that balance risk and return with short-term self-interest and long-term stakeholder goals and (2) the early warning systems that highlight growing exposures to risk. Here, the yet-to-be-implemented operational risk framework, the final piece of Basel II intended to foster a risk-adjusted performance culture, offers the greatest hope for preventing future crisis.

Basel II defines operational risk as 'the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events'.1 Meanwhile, federal regulators have called for a 'consistent and comprehensive capture and assessment of data elements needed to identify, measure, monitor, and control the bank's operational risk exposure. This includes identifying the nature, type(s), and underlying cause(s) of the operational loss event(s).'2

It is precisely this final piece of Basel II that should be preventing such crisis while fostering the creation of a risk-adjusted performance culture. Unfortunately, the financial industry is still building operational risk management systems around self-assessments, indicators and scenario analyses that project capital requirements, rather than enterprise systems that create a true risk-adjusted performance culture around people, their processes and the data with which they interact. For it is in people, in their processes and in the data upon which they act that risk exposures arise.

Basel II classifies operational loss events as resulting from internal fraud, external fraud, employment practices and workplace safety, clients/products/business practices, damage to physical assets, business interruption and systems failures, or execution/delivery/process management. Within these categories are the subcategories of model risk, faulty reference data risk, faulty product structures, process and control risk, and inappropriate sales to counterparties.

Many of the recent headline-grabbing events can be slotted into one or more of these categories. Citibank reported that its market value-at-risk does not include the positions of its collateralised debt obligations due to the difficulty in valuing them; MF Global announced a$141m trading loss resulting from a systems control problem; Merrill Lynch acknowledged $43bn of over-the-counter derivative cash flow improperly recorded on its balance sheet; Credit Suisse took a $2.8bn write-down for pricing errors; Socie´ te´ Ge´ ne´ rale reported a $4.9bn loss from trader fraud; Bear Stearns nearly collapsed because it could not price its mortgage portfolios; Lehman went bankrupt because its mark-to-model valuations for securitised mortgage portfolios proved untrustworthy; Freddie and Fannie were nationalised because they got caught holding poorly-constructed asset-backed securities when there were no buyers for the securitised mortgage pools they were selling; and Washington Mutual, HBOS

and others still to come have been taken over by stronger financial institutions which kept to their disciplined business practices.

More significant, however, was how the fiduciaries watching over the trillions of dollars of retirement funds blindly accepted the credit agencies' labelling of these products as investment grade. Anyone doing their due diligence, and who understood what they were looking at, could see the quicksand of the faulty assumptions that underpinned the models' elegant mathematics.

The failure in risk management at Socie´ te´ Ge´ ne´ rale, Bear Stearns, Lehman Brothers and the many others are egregious examples of operational loss exposures not monitored and risk-adjusted performance gone awry. Even more egregious, however, are the pay schemes that are endemic in investment banks — the pay schemes that reward those who take big risks with shareholders' capital and manage to make it to bonus day, when they can take their winnings off the table. Here, somewhere between internal fraud, employment practices and workplace safety, and clients/products/business practices, are operational risks taken in each business line that are yet to be measured or protected against.

A key decision in any financial institution is how to allocate capital to each business line. The business line is where stakeholders' capital is put 'on the line' in the risk versus reward culture of today's investment banks. First, in order to manage capital in this way, the organisation must be structured into appropriate business units within a hierarchy of accountability. Following this is the implementation of transfer-pricing schemes, cost accounting systems, and performance attribution and incentive compensation structures. All are prerequisites to fostering a capital-based risk-adjusted performance culture across business lines.

Secondly, operational risk exposure measures for the defined Basel II operational risk loss categories have yet to be developed. It is perplexing to do this because, unlike market and credit risk (the more developed categories of Basel II for which capital is set aside), operational risk has no naturally occurring monetary measure. A robust risk-adjusted performance culture depends not only on being able to properly accumulate historical data on market prices and credit default histories but also on accumulated measures of operational risk, a task yet to be accomplished.

Further, although historical data on market prices and credit defaults are robust, the links between the identities of issuers of debt and equity and their identities as counterparties in trades or as borrowers are not made in a meaningful and consistent way. This is proving difficult to resolve because there is no standard identity for issuers, counterparties or obligors, or any hierarchical structures to link them. There should be, and some trade associations in conjunction with regulators are now focused on this.

Finally, operational losses can be generalised as failures in either manual or automated processes or their interaction with faulty data. They occur either as one-time events or as the culmination of multiple failures over extended periods. There is a need for an exposure-to-risk measurement mechanism to quantify such exposures as they accumulate. This was, and remains, a key objective of the framers of Basel II.

Creating exposure-to-risk measures, typically key risk and performance indicators, in the form of operating metrics that are responsive to changes in causal factors, is the province of operations people. Equating such measures to loss frequency and severity, the province of risk managers, is still to be developed. Work in marrying the two into a common set of objectives needs to be undertaken, if it is ever to be useful in preventing another financial crisis. Help here can be provided by regulators, by adding capital reduction incentives for mitigating operational risk exposure above the arbitrary 20 per cent threshold now allowed. This would

further stimulate financial institutions to build enterprise-wide operational risk systems, as has been the case for some time with market and credit risk.

The Basel II operational risk framework is sound and still relevant; it simply needs to be put into practice in the way the regulators envisioned it. A key component of the remaining implementation is operational risk. Getting on with it should now be a top priority.

Allan D. Grody
President, Financial InterGroup, USA and Editorial Board Member, Journal of Risk Management in Financial Institutions

References

1 Office of true Comptroller of the Currency, Treasury (OCC); Board of Governors of the Federal Reserve System (Board); Federal Deposit Insurance Corporation (FDIC); and Office of Thrift Supervision, Treasury (OTS) (collectively, the Agencies), Proposed Supervisory Guidance for Internal Ratings-Based Systems for Credit Risk, Advanced Measurement Approaches for Operational Risk, and the Supervisory Review Process (Pillar 2) Related to Basel II Implementation, Federal Register, Vol. 72, No. 39, Wednesday, 28th February 2007, available at: http://www.occ.treas.gov/fr/fedregister/ 72fr9083.pdf (accessed 28th October, 2008).

2 Office of the Comptroller of the Currency, Treasury; Board of Governors of the Federal Reserve System; Federal Deposit Insurance Corporation; and Office of Thrift Supervision, Treasury, Risk-Based Capital Standards: Advanced Capital Adequacy Framework, 26th September, 2006, available at: http://www.federalreserve.gov/generalinfo/Basel2/NPR_20060905/NPR/Basel_II_NPR.pdf (accessed 28th October, 2008).

2011 Vol 4, 2

Commentary: Central counterparties – New uses for a century-old market mechanism

Received (in revised form): 24th November, 2010

Allan D. Grody

is the founder and president of Financial InterGroup Holdings Ltd, a financial industry joint-venture development company. He has had hands-on experience in multiple sectors of the financial industry and has been consulting domestically and internationally on issues related to financial institutions' global strategies, capital and contract market restructuring, industry-wide financial business reorientation, information systems, evolving communications infrastructures and risk management systems. Allan has been an expert witness for investment companies on shareholder issues and provided expert witness testimony in a landmark patent case related to the electronic trading of financial instruments. He is currently engaged in developing the Central Counterparty for Data Management, an industry-initiated effort of the Global Financial Services Data and Standards Alliance.

In earlier careers Allan was in the financial services industry and later was the founder and Partner-incharge of Coopers & Lybrand's (now PWC's) Financial Services Consulting Practice. He also founded and taught the only graduate-level Risk Management Systems course at NYU's Stern Graduate School of Business. Allan is on the Editorial Board of the Journal of Risk Management in Financial Institutions and the author/co-author of many trade articles and academic journal papers. He writes frequently on the intersecting influences of data management and risk management.

Financial InterGroup, 169 East 69th Street, 18th floor, New York, NY 10021, USA
Tel: þ1 917 414 3608; E-mail: agrody@financialintergroup.com

Abstract Central counterparties have been the preferred mechanisms used to share the risk of funding financial instruments between financial institutions and between financial institutions and their customers.With the inevitable next crisis looming, regulators have turned to a century-old concept to do what no government wants to do—guarantee that enough capital will be there the next time markets collapse. To do this regulators and industry members are embedding central counterparty mechanisms into allmanner of interconnected risk: securities lending; the repo markets; and the swaps, credit default swap (CDS) and other over-the-counter (OTC) derivatives markets.Will it be a better guarantee than the too-big-to-fail concept of governments?Will it work better than the living will doctrine that regulators are imposing on systemically important financial institutions to assist in their breakup?With more risk now concentrated in central counterparties the inevitable question arises, are those entities now too big to fail? This paper explores this question and suggests that innovations are to be expected in managing the risk of too-big-to-fail central counterparties.

Keywords: central counterparty, risk management, too big to fail, derivatives, payment and settlement, financial guarantee

A central counterparty does not remove credit risk from a financial market; rather it redistributes risk, replacing a firm's exposure to multiple parties' individual bilateral credit risk with the standard credit risk of the central counterparty.[1]

What it does provide is a better buffer against systemic risk, keeping government from bailing out industry participants. It can also open up a world of possibilities for providing needed capital when the next financial crisis is approaching.

Mutual industry-wide risk mitigation through the sharing of risk in the payment and settlement systems has long been a pillar of the global financial infrastructure. Central counterparties have been the preferred mechanisms used to transfer funds and financial instruments between financial institutions and between financial institutions and their customers through payment and settlement systems.

Generally, the term central counterparty is used to define a set of procedures used by financial institutions to confirm and support the financial obligations of all bilateral counterparties conducting transactions in the capital, contract or currency markets. Central counterparties permit payment for these obligations, and bookkeeping for settling corresponding securities. Central counterparties are generally organised as mutual risk-sharing facilities with obligations by the largest financial institutions to support each other in their potential failure to meet their obligations to make payment and/or deliver securities against payment. They require cash collateral to be maintained against the obligations they have assumed on behalf of their clients or themselves. They vary this collateral on a daily basis based upon the central counterparty's assessment of the volatility of the markets. Thus, the risk of the central counterparty corresponds to a single day's market move affecting the net position values held by all members. On a single business day, US central counterparties settle transactions valued at over US$13trn.[2]

What should be of great interest to those in the risk management profession is the vulnerability to systemic risk shared by all financial institutions. Here the vulnerability of the intertwined financial system has been a subject of much debate in the context of modern automated financial markets, dating back to October 1987 when the US market infrastructure suffered its first structural collapse. Back then the US stock, futures and options markets were convulsed by a cascade of sell orders prompted by a computer model that blindly adhered to its pre-programmed algorithms.

The lesson learned then was that the equity markets were tightly intertwined with the options and futures markets — trouble in one quickly cascaded into the other. The 6th May flash crash was again a vivid reminder of more vulnerability in automated and intertwined markets, this time futures market trading algorithms took down the equity markets to nearly a 1000-point drop of the Dow Averages in just 20 minutes before recovering.

The lesson of today's credit crunch is the same — the models went awry, defaults began and the intertwined debt markets froze up as distress in one market cascaded into other segments.

With the inevitable next crisis looming, regulators have turned to a century-old concept to do what no government wants to do — guarantee that enough capital will be there the next time markets collapse. To do this regulators and industry members are embedding central counterparty mechanisms into all manner of interconnected risk: securities lending; the repo markets; and the swaps, credit default swap (CDS) and other over-thecounter (OTC) derivatives markets.

What makes central counterparties so enduring is that they have rarely failed, the International Commodity Clearing House (ICCH) noting only three near-failures in its century-long life.[1] It was only the first, in 1974, when members of the Paris Sugar market absorbed unprecedented losses in its clearing house before being rapidly absorbed into the London Sugar Terminal market where trades then cleared through the ICCH's central counterparty facilities.[3] In 1983 the Kuala Lumpur Commodity Clearing House, and in 1987 the Hong Kong Futures Guarantee Corporation, did not have sufficient guarantee funds to make members who sustained losses from other members whole. Both markets were reconstituted under more stringent clearing house guarantees.

In discussing the financial crisis and the reasons for bailing out Bear Stearns, US regulators all voiced concern about the potential of the financial markets collapsing. It was hardly noticed, while choosing JP Morgan Chase (JPMC) for its vast capital reserves to rescue Bear Stearns, that JPMC was also a member of most of the world's central counterparties. It thus could step in rather seamlessly as the guarantor of Bear Stearns' obligations simply by assuming that company's customer positions and continuing the daily margin variation payments.

Until the end of the nineteenth century marketplace transactions were carried out bilaterally, that is, between two parties, first through barter transactions and then through representative collateral, such as banknotes, warehouse receipts, warrants, currencies, contracts and the like. In the USA, in the closing decade of the nineteenth century, the Minneapolis Grain Exchange formed the first payment and settlement 'clearing association', which permitted multi-party transactions first to be netted, then novated through means of a central counterparty. This payment and settlement mechanism was referred to as a 'clearing house'.

Leading up to this innovation was the progress in creating transaction standards for the underlying collateral, in this case grain, such as size of contracts, grade of grain, delivery location and delivery date. Each party to a transaction would submit the details as to number of bushels, agreed price, date for delivery and with whom they transacted the agreement (the counterparty) to the clearing house. The clearing house would match the transaction to the other side, that is, the identical but mirror image of the transaction (the buyer's transaction details matched to the seller's details). When judged as matched, the clearing house would pool the transactions, netting the money owed to individual counterparties and the net number of contracts each had been retained to fulfil, but in an obligation to the clearing house, no longer to each other. The original parties to the transaction would be separated from the fulfilment of the contract, with the clearing house now standing in their place. Thus, mutual risk sharing became part of the financial transaction landscape, with each member standing up to guarantee the collective interests of all members and, in turn, all of their members' clients.

To this day, this same process is carried out on most organised financial transaction markets, although in a much speedier and more automated manner. Here transactions are standardised — parties trade and agree on price and/or quantity and submit the results to a matching process, after which they are netted with obligations of net quantity and value determined between counterparties and, where central counterparties exist, novated and settled.

Clearing houses require minimum capital to be posted for each transaction at the initial acceptance of a trade, then mark-to-market the positions daily, even intraday, and in volatile markets more often than that. The daily settlement of these trades allows for the earliest warning of failure to pay with enough capital in reserve, built up by multiple margin calls throughout the life of the contract to buttress a minimum number of days of the severest market declines. When the clearing house declares a member firm overdue on its daily settlement commitments, the defaulter's positions can be transferred to another willing clearing member's account.

The speedy transfer of positions of the collapsed Refco and Bear Stearns without loss to clients and clearing members is a testament to the success of this method of risk-managing contract markets. The industry comes together to share risk in a clearing house which is better than placing the burden on the taxpayer.

Where no formal matching process is organised, or no standardisation of delivery is prescribed, two counterparties must verify the details of the trade and await the fulfilment of the same, such as when a ship container is unloaded and its contents verified by an agent against a shipping manifest. In this example and in other non-centralised financial markets such as trade finance, OTC derivatives or the reinsurance markets, standards in the form of standard bills of lading, International Swaps and Derivatives Association contract definitions and the like are prerequisites to an organised, smoothly functioning market.

With more rigorous transaction standards being mandated for swaps and other OTC derivatives, and with regulatory compulsion being a driving force, it was inevitable that the day would arrive to apply the central counterparty concept to these markets. Also where a clearing house acts as a central counterparty to multi-asset markets, such as futures and swaps, the benefit of netting of credit risk may be extended to market risk. This creates the possibility of collateral offsets where firms are long in one market and short in another (ie a long position in a bond futures contract offset against a matching short position in a repo). Regulatory capital and collateral should, therefore, be lower in central counterparties that operate multi-asset markets.

With more risk now concentrated in central counterparties, the inevitable question arises: are those entities now too big to fail? They are, but as previously described, they never do. Nevertheless, there are alternatives, especially as the central counterparty provides a transparent and easily monitored risk regime. Will it be a better guarantee than the too-big-to-fail concept of governments? Will it work better than the living will doctrine that regulators are imposing on systemically important financial institutions to assist in their breakup? With a central counterparty, the entire financial community, with a vested interest to protect each other, provides the guarantee, and only shoulders the risk of a single day's exposure at most. In the government's bailout or breakup, ultimately the disinterested taxpayers are on the hook.

Before a government-led bailout, the last resort of any collapsing financial system, it could well be that a government-led bailout fund, a too-big-to-fail fund, contingently funded by private capital, perhaps through drawdown commitments, could be applied as the first tranche of a guarantee fund. This would come into play only after the central counterparties' own calls on member capital and drawdowns of existing contingent commitments are exhausted and before the government intervened. With the experience of Troubled Asset Relief Program (TARP) funding and the return on investment that those funds earned, it should be an attractive proposition for capital managers.

Such capital sources, in the form of hedge funds and private equity investors, endowments and pension funds, family offices and sovereign funds, may find it an attractive asset class to fund an investment that does not require actual funds to be locked up. It is, in effect, selling a call option to central counterparties, where the seller earns a return on capital, and is prepared to lend money at agreed-to rates when called upon. This is the equivalent of catastrophic insurance, but not funded by the insurance industry, or a standby letter of credit, or the banking industry, but rather is a contingent call funded by private pools of capital.

With a recent and successful history of deploying government funds in this way, it should not be too long before the quants start modelling the returns on such funds and the pricing of such options. A new systemic risk mitigation regime may well be poised to be born from the central

counterparty model which is fast becoming the next new thing, but built from a century-old market mechanism model.

References

1 Hills, B., Rule, D., Parkinson, S. and Young, C. (1999) 'Central counterparty clearing', Financial Stability Review, June, pp. 126.

2 US Department of the Treasury (2008) 'Blueprint for a Modernized Financial Regulatory Structure', March, p. 101.

3 Ref. 1 above, pp. 129–130.

2011 Vol 5, 1

Book review: Report on Trading of OTC Derivatives of the Technical Committee of the International Organization of Securities Commissions

Technical Committee of IOSCO; 18th February, 2011; available free of charge at: http://www.iosco.org/library/pubdocs/pdf/IOSCOPD345.pdf

In October 2010, the International Organization of Securities Commissions (IOSCO) formed the Task Force on Over-the-Counter (OTC) Derivatives Regulation to follow the lead of the Financial Services Board of the G-20 (group of finance ministers and central bank governors from 20 major economies) to conduct a study of the benefits and challenges associated with exchange based and electronic trading of OTC derivative products.

The report presents the Task Force's analysis of benefits that are incremental to those provided by increased standardisation, central clearing and reporting to trade repositories, and methods of increasing the use of exchanges or electronic platforms for trading in the derivatives markets.

The report noted that, in a majority of jurisdictions, the legal and regulatory framework provided a number of approaches to conducting OTC trading business, reflecting highly diverse and increasingly competitive business models. In this context, it made reference to the difficulty of making distinctions between a fixed set of characteristics that is sufficient to constitute organised OTC derivatives' trading platforms. However, as stated in the report, a distinction was made anyway to 'support the realization of the G-20 objectives'. These fixed set of characteristics, seven in total that were agreed to, and an eighth that proved controversial, I will be discussing in detail.

In reporting on the different types of trading platforms of organised derivatives, the list included an order book system, a market maker system, a periodic auction system (sometimes referred to as a call market), a listing or bulletin board system and a catch-all — a hybrid system. The preferred style of operating such systems (ie to discover prices, the first purpose of a market) were defined as limit order books (LOBs), request for quotes (RFQs), and combinations of manual (voice negotiation) and electronic (referred to as hybrid markets) under single or multiple market-maker models.

The report noted that the rules of governance over trading functionality provides for special or modified operations to deal with particular market trading practices or events. It was often the case, as observed in the report, that platform operators will, subject to regulatory requirements, choose to offer a range of different trading systems based on an assessment of the features of the particular product class and the different levels of liquidity within that product class.

I might also comment that the features and functionality deployed by market platform operators, while providing market participants with a valuable place for buyers and sellers to meet and discover prices, are also operating the platforms as a competitive business, increasingly as publically-traded, shareholder-owned, for-profit businesses and that market participants must be incented to place their trades into these markets. To me this most important observation

did not get fully developed as to the consequence of different types of trading platforms that might get deployed for OTC derivatives trading. For example, the majority of trading platforms in organised markets (equities, options, futures, single stock futures, exchange traded funds, bond trading platforms, etc) produce 'tape revenue', ie revenue paid for by users of the market to observe quotes, last sale prices and size of trades executed. This revenue is shared with market makers who provide liquidity to the market. These liquidity providers are also given special privileges to keep the shop open to all comers by making two-sided markets, when no one is interested in doing so. This occurs when there is no natural 'other side' as when there is no purchaser for a seller or no seller for a purchaser at a specific price at a specific time. For this occurrence, which happens frequently in illiquid, low volume markets, market makers are usually given special 'privileges' as, for example, to be allowed to take a certain percentage of the trade before the public is given its opportunity. Fair, of course, if you consider that someone needs to be there to take the other side of a trade, to keep the store open so as to speak, so some incentive has to be provided by the market platform operator — unfair if you are a purest about how markets should work versus how they work in practice. There are many other 'nuances' of trading markets that are important to understand, especially as they relate to thinly traded markets (the issue at the core of choosing trading platforms for OTC derivatives) versus robust and high volume markets, like that which is seen in S&P 500 stocks, where the markets discover prices without much market maker intervention. Much has been written on market micro-structure and it is not my intent to cover this vast body of knowledge in this review. (I refer you to two papers: one a survey of global electronic markets[1] and the other about the evolution of electronic financial markets[2] that I and colleagues authored at the earliest point in the development of electronic trading platforms. This is offered as a starting point for further exploration for those readers so inclined.) The Task Force identified seven characteristics of trading platforms, what I choose to call asp rational or framework statements, which are listed below:

(1) Registration of the platform with a competent regulatory authority, including requirements relating to financial resources and operational capability;

(2) Access for participants based on objective and fair criteria that are applied in an impartial, non-discriminatory manner;

(3) Pre- and post-trade transparency arrangements, which are appropriate to the nature and liquidity of the product and the functionalities offered by the platform;

(4) Operational efficiency and resilience including appropriate linkages to post-trade infrastructure and measures to handle potential disruption to the platform;

(5) Active market surveillance capabilities, including audit trail capability;

(6) Transparent rules governing the operation of the platform; and

(7) Rules that do not permit a platform operator to discriminate between comparable platform participants in relation to the interaction of buying and selling interests within the system, whether fully electronic or hybrid.

Characteristic 7 seems to fly in the face of existing mechanisms for incenting market makers, as noted previously, especially in illiquid markets. I leave that to readers to decide on the purest versus practical discussion previously noted and whether this seventh point should stand as is or be modified. An additional characteristic had been identified by the Task Force as one that would provide benefits over and above the seven general characteristics described above. However, some in the Task Force stated that this eighth characteristic would generate additional costs above the costs generated by the other seven:

(8) The opportunity for platform participants to seek liquidity and trade with multiple liquidity providers within a centralised system.

This additional characteristic is generally associated with multi-dealer, as opposed to single-dealer, platforms.

The members of the Task Force were not in agreement as to whether this additional characteristic should be considered a minimum requirement necessary for organised platforms to achieve the G-20 objectives of improving transparency, mitigating systemic risk, and protecting against market abuse or whether the first seven characteristics are sufficient to achieve the G-20 objectives.

The report stated that many Task Force members believed that to achieve the G-20 objectives a centralised system was required. Such a trading platform would offer access to multiple liquidity providers. Centralising trading, it was argued, should mitigate systemic risk by reducing the concentration of derivatives activity in a few market participants. Additionally, such organised platforms would operate independently of any one market participant and therefore promote better regulatory oversight, provide systemic risk benefits and strengthen protections against market abuse.

Other Task Force members believed that the same benefits can be achieved whether a particular platform offers access to multiple liquidity providers or not. These members could see that the first seven characteristics of OTC trading platforms represent a significant strengthening of current rules in the majority of IOSCO jurisdictions. They also noted that a market consisting of a mix of single- and multi-dealer platforms for standardised derivatives might also provide many systemic risk benefits, and that the additional eighth characteristic, excluding single dealers as an element of the market structure, would involve costs along with their additional benefits.

It is a simple thought to contemplate: if we could only bring all trading venues together in a consolidated space and in a single point in time, we would improve pricing, provide transparency and offer fairness to all in accessing market liquidity. Can we do this, should we do this? Why would we do this? First, definitions are important here:

- centralising markets does not necessarily mean a centralised order book, nor a fairer more transparent market — it could, but practice suggests it does not, such as when large orders borrow prices from order books to be executed off market in other jurisdictions — the regulatory arbitrage issue, or permitted for purposes such as internalisation (efficiency for small order processing) and market stability (stabilising price volatility for institutional-sized orders);
- centralised markets can be multiple liquidity pools linked together across local and/or wide-area fibre;
- centralised markets can be multiple trading algorithms linked to central order flow or quote flow or a central order book;
- centralised markets can be single or multi-asset trading venues, with single or multiple next execution cues;
- centralised markets can be integrated markets across time and space, as are markets in the USA;
- centralised markets can offer real-time risk management, electronic audit trails and regulatory transparency.

Here is a set of possible approaches to consider in OTC derivatives trading platforms that did not get discussed in the IOSCO report:

- Favour risk management and transparency over less efficient (multiple non-integrated single dealer liquidity pool) markets — arguments about singledealer markets eliminating single points of failure ring hollow in the face of resilient networks, clouds of redundant computer power and multi-location data centres.
- Think about the possibilities of multiple trading platforms (really trading and market making algorithms) co-located and competing for executions around a single data pool of real-time orders or quotes, or both — single only in concept as in joined data sets, not in physical proximity.
- Consider the possibilities of starting up new trading markets or new products with a global population of Internet traders — centralised markets or 'single global portals' could be where market enthusiasm is built up (go viral as they say!).
- When dealers break away from sponsoring market places to specialised groups of traders or investors, and think more about broad liquid markets that come from many trading points of contact, the resilience and value of centralised markets will become apparent. If the OTC derivatives world is being asked to move onto electronic trading platforms, let it think about embracing more innovative models, perhaps built around attracting retail order flow — think S&P E-mini contracts and ETFs and the increased liquidity that it brought to what had been an institutional market of trading the S&P 500 stocks in large denomination baskets.
- Single- or multiple-dealer markets, connected together by slow or low speed communications lines, even high-speed no-latency communication lines, only perpetuate time and price arbitrage, even information and regulatory arbitrage. Such markets are not what liquid, transparent, fair and orderly markets are all about.
- In a global world of anytime, anywhere, anyplace and anything technologies, protecting concepts of one-on-one markets is like trying to hold onto customers who always bought what you had to sell, but who now know that others sell it as well. OTC derivatives dealers can join those others in the liquidity pool of the centralised cloud, or can stay singularly focused until the end, perhaps until the next and last bonus pool day. To quote the IOSCO report on promoting centralised OTC market trading structures:

'The Task Force recognizes that, if some jurisdictions choose to establish requirements that give effect to all eight characteristics [the eighth being "The opportunity for platform participants to seek liquidity and trade with multiple liquidity providers within a centralized system"] while other jurisdictions do not, the resulting regulatory disparities have the potential to influence market participants' choice of venues in which to conduct business.' (The Task Force notes the G-20 Leaders' recognition of the importance of 'implement[ing] global standards consistently in a way that ensures a level playing field and avoids fragmentation of markets, protectionism, and regulatory arbitrage.')[3] *'The difficulty lies not so much in developing new ideas as in escaping old ones'*

— John Maynard Keynes

Allan D. Grody
Editorial Board Member
Journal of Risk Management in Financial Institutions

References

1 Grody, A. D., Levecq, H. and Weber, B. (1994) 'Global electronic markets — A preliminary report of findings', NYU Working Paper No. 2451/14225.

2 Grody, A. D. and Levecq, H. (1993) 'Past, present and future: The evolution and development of electronic financial markets November', NYU Working Paper No. 2451/14228.

3 Statement No. 12 (2009) Leaders' statement: The Pittsburgh Summit (24th–25th September, 2009). Available at http:// www.g20.org/Documents/pittsburgh_ summit_leaders_statement_250909.pdf.

2012 Vol 5, 3

Guest Editorial: Special Issue - Systemic Connectedness: Measuring and managing Counterparty Risk (co-editors: Eduardo Canabarro, Til Schuermann, Eliza Hammel)

It is our pleasure to introduce this special issue of the *Journal of Risk Management in Financial Institutions* on 'Counterparty Risk'. It is devoted to illuminating counterparty risk — its impact on portfolios of assets, its relation to market risk, the role it plays in systemic risk, how counterparties are identified and their portfolio values aggregated, and what techniques are evolving to measure and mitigate such risk.

As became clear in the aftermath of Lehman Brothers' failure, regulators, forensic accountants, bankruptcy attorneys, auditors and lawyers who poured over Lehman Brothers' risk management systems were not able to understand which counterparties they were observing. They could not determine how much risk exposure each counterparty had to Lehman and Lehman to them. The valuation of credits and collateral that were outstanding, and the tenor and economic terms of bilateral swaps that were still open, were suspect. Payments continued to be made to bankrupt entities without any means to understand that those entities were related to the bankrupt Lehman.

In this special issue, the papers accepted for publication explore various aspects of counterparty risk and solutions that in many cases are both innovative and at the same time practical. The lead comment to the special issue is provided by Andy Haldane, Executive Director–Financial Stability, Bank of England in his paper 'On counterparty risk'. His example of the contagious chain of apparently simple loans in the money markets, made across multiple financial institutions, brings into stark reality both the unobserved counterparty risks still in the financial system and the challenges we face in containing it.

One of the many challenges in containing counterparty credit risk (CCR) in the financial system is the sheer complexity of calculating a reasonable measure of the credit risk of an exposure. Klaus Bo¨cker, Head of Risk Models & Analytics at Deutsche Pfandbriefbank AG and Roland Stamm, Managing Director at HRE Group, walk readers through some of the more intractable open issues related to the measurement of CCR, including those related to the complexity of simulating exposures, calculating credit valuation adjustments (CVAs), valuing collateral, and selecting appropriate model parameters and design.

Credit valuation adjustments are a complex measure, since calculating CVA requires joint simulations of the path of future default risk with the path of future exposures, taking into account a variety of non-linear events such as occurs through collateral arrangements. This complexity is compounded by the difficulty of taking into account the co-movements of the exposures and the credit risk, and in particular the cases of wrong-way risk (WWR), where the counterparty exposure increases when its credit quality deteriorates. Two papers in our special issue address the important topic of WWR.

Michael Pykhtin, Senior Economist at the Federal Reserve Board, presents a methodology to incorporate general WWR into the framework that underlies Basel capital rules. In addition,

the author argues that the new Basel III requirements for calibrating stressed exposure at default (EAD) will overstate EAD in both benign and stressed periods. Dan Rosen, CEO at R^2 Financial Technologies and David Saunders, Associate Professor of Statistics and Actuarial Science at the University of Waterloo, present a robust and computationally efficient method to calculate CVA that incorporates WWR.

The transfer of exposures to central counterparties (CCPs) introduces yet a new type of complexity in measuring a firm's counterparty credit risk. Modelling a CCP's credit risk requires taking into account the structure of CCP's capital reserves and guarantees, the loss distributions of the individual member portfolios and the CCP's tail risks driven by the correlated default distributions of the participants. Complicating this further is that all these inputs — necessary for a complete analysis of credit risk — are not likely to be transparent to members. Matthias Arnsdorf, Executive Director of Risk Methodology EMEA at JP Morgan Chase, discusses one approach to quantifying the credit risk facing a financial institution exposed to a CCP that takes into account all these factors. Given the likely absence of full transparency, the author's model finds a proxy in margin levels to act in place of missing information on portfolio composition and collateral levels of individual clearing members.

Even if one institution could perfectly measure its own risk to a single counterparty it would be difficult in today's environment to get a complete view of exposures across multiple market participants. This inability to aggregate data across counterparties and firms represents a key impediment for regulators to measure and monitor systemic risk. Regulators at the global level are asking for a unique and standardised legal entity identifier (LEI) as a great step forward to help address this challenge.

Allan D. Grody, President, Financial Intergroup Holdings Ltd, Peter J. Hughes, Principal, Financial InterGroup–UK and Daniel Reininger, Chairman, CEO and President, Semandex Networks, Inc discuss the resulting systemic risks posed by the current inability to aggregate exposures within and across firms. They propose a global identification solution for financial market participants to aggregate counterparty exposure across separate business units of a single firm and to assess systemic risk across multiple financial firms.

Dilip Krishna, a Director at Deloitte & Touche LLP also discusses the importance of improved data management for understanding systemic risk. The author states in his paper that systemic risk is largely caused by the complex and unanticipated interrelations of economic factors and the extent to which market participants interact with each other. In addition to aggregating counterparty exposures, he postulates on the kinds of data sets important for systemic risk analysis and provides insights into the desired components of a systemic risk information solution. While aggregating data serves to summarise conclusions, it is necessary to provide an audit trail to detailed and granular data such as reference data, valued position data, cash flow data and other transactional information. It is well understood that information tends to lose much of its meaning in the aggregation process.

One way that regulators have worked to reduce aggregate bilateral exposures is by encouraging financial institutions to move their exposures to CCPs. If CCPs lead to increased multilateral netting as intended, exposures after counterparty netting will be substantially reduced. Add to that the enhanced margining requirements and the total system exposure should fall. In addition, the mutualised sharing of losses and the enhanced standardisation of contracts should reduce the impact of the failure of a simple counterparty. These possible benefits of CCPs notwithstanding, several authors in this issue raise a number of important concerns that must be considered as more and more exposures are cleared through CCPs.

Manmohan Singh, a Senior Economist at the International Monetary Fund (IMF) and David Murphy, Founder and Principal of rivast consulting and the former head of Risk and Research

at ISDA, discuss some of the systemic risks brought on by CCPs. Singh suggests that the movement from bilateral exposures at dealers to netted exposures at CCPs simply moves the too big to fail problem and the source of the contagion of systemic risk from banks to CCPs. Murphy discusses the risks posed by the potential for a CCP failure as a result of either solvency or liquidity reasons. Both authors suggest potential risk mitigation techniques to offset the new risks posed by CCPs.

Alistair Milne, Professor of Financial Economics at the Loughborough University School of Business and Economics in the UK, reviews the social costs and benefits of CCPs and analyses the compliance burden on firms. The author argues that improved oversight of market participants, and the improved management of default in a systemic crisis, are the main benefits of moving to CCPs, not lessening systemic risk. He argues that a more flexible approach towards CCP clearing on the part of regulators could achieve a more appropriate balance of reducing systemic financial risk, while also reducing the compliance burden on firms.

Finally, Allan Grody reviews Harvard Business Publishing's *The Devil's Derivatives* by Nicholas Dunbar, a trained physicist turned journalist, who describes prominent market participants, their derivatives creations and their trades based on the author's presence at the events of the day.

The story is about derivatives that morphed from its origins in the 1980s as a relatively simple risk transferring mechanism to their *devilish* aspects: their complexity, non-traditional uses, inherent conflicts of interests, opaque transfers of risks and huge amounts of money being made by those who were better informed on the construction of these complex financial products.

Grody concludes that the book should be read by every regulator who is charged with regulating derivatives — to understand what motivates those who invent these products, the same people no doubt who informed these same regulators as to how they 'really' work. Grody says that this will be an eye opener for any regulator who thought they knew!

As the editors of this special issue we are pleased that such an impressive group of practitioners, policy people and academics gave their time to publish in the Journal. We thank them for the contributions they have made in bringing us and the profession more clarity on such a timely and important risk subject.

Eduardo Canabarro
Managing Director, Morgan Stanley

Allan D. Grody
President, Financial InterGroup

Eliza Hammel
Supervising Examiner, Federal Reserve Bank of New York

Til Schuermann
Partner, Oliver Wyman

2012 Vol 5, 3

Book review: The Devil's Derivatives

The Devil's Derivatives
Nicholas Dunbar
Harvard Business Publishing, Boston, MA; 2011; ISBN 10:1-4221-7781-5; 320 pp.; US$27.95/£17.99

The title of this book presages the story telling to come. The book by a former technology editor of *Risk Magazine*, Nicholas Dunbar, a trained physicist turned journalist, describes prominent market participants, their derivatives creations and their trades based on the author's presence at the events of the day.

The story is about derivatives that morphed from their origins in the 1980s as a relatively simple risk transferring mechanism to their devilish aspects: their complexity, non-traditional uses, inherent conflicts of interests, opaque transfers of risks and huge amounts of money being made by those who were better informed on the construction of these complex financial products. Taking a simple concept of credit rating arbitrage and substituting (swapping) periodic variable interest rate cash flows for fixed rate cash flows, the financial engineers took advantage of their clients who did not understand these products as they were cloaked in indecipherable jargon and the pretence of mathematical precision. The frat boy star player turned financial engineer/salesman was placed in an inherent conflict of interest of being trained, in concept, to be a trusted adviser but soon adapted a buyer beware mindset brought on by a hugely incentivised compensation system.

It should not be forgotten that in the process of 'competing' to innovate a derivative structure and win a trade with a client, dealers and their agents compete away most of the 'economic profits' while transferring much information about the market, the trade and the price to their clients. They become in large part 'price takers' as opposed to 'price setters', at least to the more attuned clients, which is the majority of the institutional class of purchasers of the exotic products the author describes in his book. To the point that, over the last 30 years the bid/ask spread of a plain vanilla interest rate swap (the pervasive 'bread and butter' type of OTC derivative) fell to a fraction of a single basis point.

To the credit of the innovators and consultative salesmen and saleswomen in the derivatives business, the amount of socio-economic benefit that such inexpensive, efficient transfer of risks brought to our developed economies is quite astonishing. The growth has been unprecedented, six hundred trillion dollars of notional value of a new and important financial risk management tool that has become an essential component of global financial markets today. Do derivatives need to be more controlled and made more transparent because of their size and connectedness and the systemic risks that they create? Yes and they are, part of the risk adjustment of the financial system being taken up by regulators around the globe. Are there stories of mischief around these creations? Yes, and Nick Dunbar tells them with an attention to detail and an equally attentive eye on the motivating behaviours.

Nicholas Dunbar's informative exposé describes huge amounts of money made by investment bankers portrayed as bonus-driven, reckless traders and risk-takers (*the men that like to win*) who concocted exotic credit derivatives (collateralised debt obligations (CDOs), CDO^2s, etc) and *financial robots* (structured investment vehicles (SIVs) and special purpose vehicles (SPVs)) to maximise their profits at the expense of their clients.

Regulators, banks' risk managers and risk measurement models are criticised as inept to assess the banks' risks. Mark-to-market accounting is portrayed as an evil mechanism that allowed the bankers to realise revenues and profits upfront and which created unstable markets by forcing de-risking when markets turned around. Credit derivatives are described as instruments that enable *bets on the death of a company* and value at risk (VaR) models as *gamed by smart traders* to expand their risk-taking capacity.

Credit rating agencies are portrayed as conflicted and perverted by the profits that they had realised via the successful placement of the securities that they rated. The 2008 financial crisis is described as being primarily caused by the excesses and abuses of banks and bankers and their *destructive financial innovations: derivatives*.

Sounds familiar? Yes. The book mostly tells the story of a decade of the few adventurous swash-buckling pirates who stole from the unsuspecting to favour themselves. Starting out first not to plunder but believing that they were helping clients manage their risk, they became 'make it to the finish line' heroes who took the money off the table once each year at bonus time. The book presents in great detail the events of the day that gives truth to the criticisms of the financial industry that one of the major causes of the financial crisis was those *devilish* derivatives, at least those placed in the 'trusted' hands of those who turned out to be mischievious at best and fraudsters at worst.

The author's language is lively and the stories that he tells are graphical and entertaining from the outset. The characters include names that the reader is likely to recall from newspaper and magazine accounts of that era. The infamous US$65,000 expensed dinner to celebrate a successful year of trading bonds in structured CDOs and the huge year-end bonus it earned for the bond trading group. Important features of the financial industry are explained in clear and accessible language: marking-tomarket vs actuarial accounting, short-term vs long-term financing, commercial banks vs investment banks. The roles of insurance companies, rating agencies, risk measurement models and regulatory frameworks are placed in the context of their contributions to the disaster that befell the global economy.

Despite being entertaining reading, I found this book missing the broader and deeper perspective. This is particularly noticeable considering that this book has been published almost four years after the beginning of the 2008 financial crisis and after so much has been investigated, discussed, published and analysed about the crisis. Focusing on the flashy events, traders and trades, the book does not examine enough of the not-so-flashy and deeper excesses that created the financial markets context leading to the crisis. For example the failed CDO^2 (squared) product required a fiduciary's review of one billion pages of legal and financial information contained in hundreds of paper-based offering memoranda. No one did that before buying the product. Another example was the excesses of lax mortgage underwriting that fed the securitisation machine and gave an underlying pretence of value to the derivatives created around them.

I think that this book is very worthwhile reading because it is consistent with much of the public and political sentiment about the financial crisis, financial derivatives, banks and bankers. Although taken out of context of the good that risk shifting markets have accomplished, it does provide context to the understanding of many of the financial industry regulatory reforms taking place currently. It should be read by every regulator who is charged with regulating derivatives — to understand what motivates some who invent these products, the same people perhaps who informed these same regulators as to how they 'really' work. This will be an eye opener for any regulator who thought they knew!

Allan D. Grody
Editorial Board Member
Journal of Risk Management in Financial Institutions

2013 Vol 6, 1

Opinion: Basel Committee's fundamental review of the trading book: A commentary[1]

Received (in revised form): 9th November, 2012

Allan D. Grody*

is President of Financial Intergroup Holdings Ltd (New York, NY) and a founding Editorial Board member of the Journal of Risk Management in Financial Institutions. In an earlier career, he was the founder and partnerin- charge of Coopers & Lybrand's (now PwC's) Financial Services Consulting practice and founded and taught the only graduate-level risk management systems course at NYU's Stern Graduate School of Business.

Kiran J. Fernandes

is the Research Director, Professor of Operations Management and Head of the Operations Management Group at the York Management School. He holds a PhD in operations management and systems from the University of Warwick; a master's (MS) from the James Worth Bagley College of Engineering at Mississippi State University (MSU); and a bachelor of engineering (Hons.) degree in production from Waltech.

Peter J. Hughes

is a visiting research fellow at the York School of Management, University of York (UK) and Managing Director of Financial InterGroup (UK) Ltd. He is a former country/regional executive with JPMorgan Chase and a fellow of the Institute of Chartered Accountants in England and Wales.

J. Steven Toms

is Chair in Accounting at Leeds University Business School. He has led a number of research projects sponsored by professional accounting bodies, including a recent project entitled 'Accounting Based Risk Measurement', funded by the Institute of Chartered Accountants in Scotland. He is a chartered accountant and was awarded his PhD in 1996 from the University of Nottingham.

*169 East 69 St., New York, NY 10021, USA Tel: þ1 917 414 3608; E-mail: agrody@FinancialInterGroup.com; kiran.fernandes@york.ac.uk; peter.hughes@ fig-uk.com; j.s.toms@leeds.ac.uk

Abstract In July 2009, the Basel Committee on Banking Supervision (BCBS) issued revisions to the market risk framework. At the same time, the BCBS initiated a fundamental review of the trading book. The review's intent was to evaluate comprehensively the overall design of the market risk amendment of 2004 and the update of 2009 including an assessment of the risk-quantification techniques adopted within Basel's internal models-based and standardised approaches. The resulting document provides commentary on weaknesses identified in the prevailing Value-at-Risk (VaR) based capital adequacy regime, concluding that shortcomings resulted in materially undercapitalised trading book exposures prior to the crisis. As a consequence of the review, the BCBS is proposing that VaR be replaced by the Expected Shortfall methodology, thereby increasing the sensitivity of the risk regime to accommodate

extreme events or 'tail risk'. Given the nature and extent of the weaknesses reported in their paper, the wisdom of building on an evidently flawed regime in an incremental way is questionable. In this commentary on the BCBS's proposals, the authors suggest that more fundamental revisions should be considered with a view to reinstating accounting in place of financial modelling, as the foundation on which capital adequacy should be determined and administered.

Keywords: Basel, Value-at-Risk, Expected Shortfall, risk accounting

PROBLEMS WITH CURRENT APPROACHES TO RISK MEASUREMENT

In July 2009, the Basel Committee on Banking Supervision (BCBS) issued revisions to the market risk framework.2 At the same time, the BCBS initiated a fundamental review of the trading book.3 In this review, the BCBS is proposing that Value-at-Risk (VaR) be replaced by the Expected Shortfall (ES) methodology. By looking through the ES lens beyond the 99th percentile of the extreme expected loss distribution, a broader range of potential outcomes may be observable than those obtained through VaR. Indeed, it could be argued that ES incorporates the stress tests typically applied to VaR outcomes, thus effectively constituting a stressed VaR calculation.

ES and other VaR derived methods suffer a number of limitations leading to misconceptions as to what their outcomes truly represent. For example, Brown observes that VaR is frequently, but incorrectly referred to as a maximum loss figure, or 'largest likely loss'. It is certainly the case that VaR can be better measured than most alternatives, but what does it tell us? It's not the worst-case loss: in fact, we expect to lose more than VaR two or three times a year.[4] This provides yet more evidence of the inappropriateness of VaR as a basis for the administration of enterprise-level regulatory capital requirements.

A further limitation of VaR is a consequence of the inherent variations in modelling theories, beliefs and assumptions that may exist between functions within enterprises and between enterprises. Further, the inability to identify the same counterparties and even products consistently throughout the many business silos within a firm, and across firms, compromises the enterprise value of VaR. In the absence of a capability to aggregate positions across business units at the enterprise level before applying VaR models, firms typically apply aggregation techniques that are contrary to the non-additive nature of VaR.

REINSTATING ACCOUNTING AS THE FOUNDATION ON WHICH CAPITAL ADEQUACY IS DETERMINED

The BCBS reported that the crisis and pre-crisis experience highlighted a number of shortcomings in the trading book regime, which can broadly be categorised into weaknesses arising from: (a) the overall design of the regulatory capital framework, especially the inclusion of instruments exposed to credit risk in the trading book; (b) the risk measurement methodologies used under the models-based and standardised approaches; and (c) the valuation framework applied to traded instruments.

The paper concludes that, in combination, these shortcomings resulted in materially undercapitalised trading book exposures prior to the crisis.

A fundamental principle of risk management is that the framework comprising the dynamic quantification of exposure to risk, the setting of an institution's risk appetite, the determination of its capital requirement and the pricing of risk inherent in its financial products should be

derived from a common risk measurement framework. If it is to be meaningful and effective, such a framework also requires a common unit of risk measurement to ensure its consistency and comparability across and between diverse operating environments and enterprises. In the view of the authors, the debate of such a common risk measurement framework, currently VaR versus ES, should be broadened to include accounting-based measures that not only allow extreme tail events to be analysed, but also analyse and, more importantly, mitigate accumulating risks and risk-appetite excesses that have previously gone undetected and unmeasured.

It is the authors' belief that an important response to perceived weaknesses of VaR-based approaches is the call to adapt and reinstate accounting as the foundation on which financial condition and capital adequacy are determined and disclosed. Indeed, it can be argued that the disclosure of an enterprise's financial condition and the concomitant determination of its capital adequacy should be a function of accounting rather than financial modelling. But if accounting is to fulfil this core function, the current practice of basing accounting on notional transaction values must be adapted in such a way that accounting is based on the risk exposures inherent in approved transactions.

A possible approach to achieving this is to adapt management accounting so that the management information typically attached to transactions upon their registration in banks' accounting systems (customer, product, organisation, market segment, unit cost, transfer pricing *et al.*) is complemented by information on the risk exposures triggered upon a transaction's acceptance. In this way, a calculation of risk-weighted transaction values may be enabled that can then be accounted for. The possible outcome of such a risk accounting technique[5] is a risk management system that has the considerable advantage of providing a comprehensive risk-reporting framework tied to the financials of the enterprise. The benefits are potentially significant for regulators as capital requirements can be the result of explicit measurements of exposure to risk following auditable processes. Investors and other stakeholders will similarly derive benefit as they will acquire the facility to compare directly the level of risk accepted by a firm both absolutely and in comparison to others. Finally, given that risk accounting is an extension of management accounting, risk appetite setting and monitoring can become an integral part of firms' financial budgeting and business planning cycles.

References

1 Fernandes, K.J., Grody, A.D., Hughes, P.J. and Toms, S. (2012) 'Response to the BIS's Consultative Paper on Trading Book Risk Measurement Alternatives', available at: www.bis.org/publ/bcbs219/ financialinterg. pdf (accessed 16th November, 2012).

2 BCBS (2009) 'Revisions to the Basel II market risk framework', Bank for International Settlements, Basel, available at: http://www.bis.org/publ/bcbs158.htm (accessed 16th November, 2012).

3 BCBS (2012) 'Fundamental review of trading book capital requirements: consultation by the Basel Committee', Bank for International Settlements, Basel, 3rd May, available at: http://www.bis.org/ press/ p120503.htm (accessed 16th November, 2012).

4 Brown, A. (2008) 'Private Profits and Socialized Risk', Global Association of Risk Professionals, Jersey City, NJ and London.

5 Fernandes, K.J., Grody, A.D., Hughes, P.J., Phillips, O. and Toms, J.S. (2012) 'Risk Accounting: An Accounting Based Approach To Measuring Enterprise Risk And Risk Appetite', Social Science Research Network, available at: http://ssrn.com/ abstract=2165034 (accessed 16th November, 2012).

2013 Vol 6, 1

Book review: Governance Reimagined

Governance Reimagined
David R. Koenig
Wiley Finance, John Wiley & Sons, Hoboken, NJ; 2012; ISBN: 978-0-470-59878-8; 234 pp.; US$75.00

Governance Reimagined by David R. Koenig (Wiley Finance, 2012) is a brilliantly simple to understand book written on a very esoteric but important subject, governing the risk of value creation in complex systems. The relevance to today's corporate boards and C suite executives who have gone through the worst period of economic turmoil in nearly a century jumps out at the reader in every chapter. From the sources of value and wealth creation in organisations to understanding the human decision process around risk taking. The author's risk management background, combined with a philosopher/psychologist's eye for understanding how humans operate in clusters and individually make decisions sets this book apart from all other economic, finance and risk management books. Every board member and chief executive officer who worried over unfathomable explanations of what can or did go wrong in an organisation needs to read this book to bring the economic and financial jingoism spoken in corporations down to the human, understandable dimension. The use of clever devices such as the dark room risk taking conundrum; approaches to actually discovering black swans through scenario simulations; even showing the same problem responded to differently through changing the description from negatively framed to positively described takes risk management to a new understanding.

Some understandings of risk management, well understood but very infrequently discussed, find a new outlet for discussion through David's voice. The premise of Gaussian (normal) distribution, the underpinning of most risk management theory is simply dismissed as not accounting for the degree of skewness in real world applications of the theory. The notion of no value creation and no risk mitigation benefit of large financial enterprises is disputed, with a nod to it being difficult, noting diversification benefits of the largest companies that have developed complex but highly adaptive systems, especially those that interact with internal entities and outside agents continually. There is a lesson here for those who believe there is no benefit to being big, global and diversified especially as it relates to the pejorative term 'Too-big-to-fail' applied to such banks where some argue that they should be broken up. Finally, an elegant discussion of amplification effects of risk wherein those who are acting on supposedly accurate risk information panic when reliance on 'experts' on risk management fail to exercise their oversight and due diligence role. This amplification effect was apparent in the financial crisis of 2007–2008 and repeatedly in the case of the Madoff Investment Ponzi scheme, the MF Global and Peregrine futures debacles, the European sovereign debt crisis and, most recently, in the JP Morgan Chase trading losses.

The governance lesson of this book is about empowering and challenging at the same time, both at the board level and throughout the different layers of management in an organisation. The risk management lesson is to lower the perceptions that expected outcomes will not be achieved through developing systems of controls that have multiple protective break points — a cascading set of triggers that warn of losses before they are realised.

This book is for all those executives who shied away from the quant's unfathomable definition of risk and the elite management gurus' pontifications on governance and management of enterprises. It is especially for all who simply want to be refreshed about these subjects from a new, human perspective.

Allan D. Grody
President, Financial InterGroup Holdings Ltd

2013 Vol 6, 2

Book review: Bull By The Horns

Bull by the Horns
Sheila Bair
Free Press, Simon & Schuster, New York, 2012; ISBN-13: 978- 1451672480; 415 pp.; hardcover, US$26.99

The US Military was the first formal federal institution. It was joined by another great federal institution at that same time, the first Bank of the United States. Created by the first US Secretary of the Treasury, one of the major financial innovations proposed and supported then was to establish financial order, clarity and precedence in the newly formed United States. We are still waiting to achieve those goals.

In Sheila Bair's illuminating book the seeds of competition and intramural rivalry among and between private bankers and federal bankers that emerged then had still not been brought to order after two centuries. The military, however the rivalries, always managed to function on the battlefield as a team, raising the flag as one fighting force in pursuit of life, liberty and justice for all. Not so our federal bank warriors according to former Federal Deposit Insurance Corporation (FDIC) Commissioner Bair.

The book is a 'in the room' account of the turbulent times leading up to and through the great financial crisis that we have not yet seen an end to. Its view is from the new millennium forward to the present (2012), when the community banks were given leeway to fund a glorious time of home ownership (the 'chicken in every pot' concept of an earlier tumultuous time as is the present). It was also a time when the Government supported entities Freddie and Fannie were in their halcyon days of growth and prosperity, and a time of securitisation of assets of all types and stripes that became the golden pot of Wall Street growth and wealth for the brokers and bankers. The customers too would become wealthy but not for long.

Ms Bair writes of interagency bickering and back biting, of fair play turned into sharp elbows and eventually of knives in the back. All the while the banking agency teams on the battlefield 'fighting' the bankers who, while portrayed as money hungry, are not portrayed as villainous as those appointed to serve the people's interest. The bankers fighting over money is understandable, that is their business; the people servants fighting over power and prestige is understandable as well, that is their business. The inability to field a fighting force of federal regulators under one flag, the military metaphor above, is the disappointment of this era and the message of this book.

The book is about Ms Bair as the hero, seeing risk triggers up close and personal but who could not stop the financial crisis from happening. The mortgage meltdown was observable and palpable in the run up to Washington Mutual' s failure as was the case in the lesser known failure of Shore Bank. The mortgage securitisation programmes were likewise observed for what they were, taking a sow's ear and turning it into a silk purse.

Money was too easily made selling no documentation ('no doc') loans, called liar loans, with adjustable interest rates set with low starter rates to people who we called NINJAs (No Income, No Jobs, No Assets). The NINJAs could not make the new payments when they reset, the rest is history.

The story told is of signs along the way seen by Ms Bair and her colleagues at the FDIC who, as the federal organisation that had to fund the failed banks was most exposed on behalf of the US

government (and, I might add its people). They observed WaMu's (Washington Mutual Bank's) problems building up as their loan portfolio moved from fixed rate loans in the 1990s to where 90 per cent of their home equity loans, 77 per cent of their option arms and 50 per cent of their subprime mortgages were no docs. The risk triggers were also apparent at Shore Bank when their local community lending prestige and image was leveraged to make micro loans in developing countries.

The villains were bankers who had an annual run each year at making it to the finish line and taking their bonuses off the table. To blame also were the institutional investors in mortgage securitisations who saw a better return by having loan servicers go one-on-one with defaulting mortgage holders rather than negotiate a wholesale principal or rate reduction as resets where scheduled to be occur en masse.

The villain in the book is not so much the greedy bankers and hedge fund investors as it is the US Secretary of the Treasury who, when head of the New York Federal Reserve, oversaw the sophisticated trading desks of the major New York banks and failed to see the deceptions in their trading books and trading techniques. Singled out most notably by Ms Bair were Citibank and Barclays. Citi loaded up on collateralised debt obligations and credit default swaps that could not be priced as dealers withdrew from these markets. Barclays traders conspired out of their New York trading room to fix LIBOR rates.

Mr Geithner is portrayed as someone trying to assist the bankers in their money making role, of course to shore up their capital base for the important lubricating role they perform in the economy role, but tilting way too far in that direction. Ms Bair would wield an axe and let free markets perform as they are supposed to, taking the weak down and leaving the strong to survive. This was to be done while maintaining the FDIC's admirable performance record in winding down bank failures from the days of its early leader Bill Isaac who dealt with the Savings & Loan failures to its just retired Chairwoman Ms Bair who dealt with this crisis as she was permitted to.

The stew that brought all the dysfunction together was the Financial Stability Oversight Council (FSOC) concocted by Ms Bair as an independent agency but who lost control of it to her nemesis, Mr Geithner, as it became part of the US Treasury. The FSOC brings not just a few agencies together around a table to make joint decisions but 15 agencies including all the bank regulators, the capital and contract market regulators and the insurance regulator.

As Ms Bair points out the rivalry of any two agencies is sufficient to halt effective supervision, let alone action as in winding down a 'too-big-to-fail' institution. Could the fifteen come to any decision? Could the ten voting members, each head of their respective agencies achieve a majority vote?

Ms Bair will have the last word on the FSOC as her newly minted System Risk Council, made up of former retired agency heads and senators begins to shadow the FSOC's actions in attempting to prompt them into action. However, Mr Geithner will get the very last word, soon to retire and sure to write his account of events shortly thereafter.

Allan D. Grody
President, Financial InterGroup Holdings Ltd, Editorial Board Member,
Journal of Risk Management in Financial Institutions

2013 Vol 7, 3

Book review: Strategic Innovations in Risk Management - Compliance 1, Innovation 0

Strategic Innovations in Risk Management — Compliance 1, Innovation
Cubillas Ding
Celent, 2013, available at: http://www.celent.com/reports/strategicinnovations-risk-management-part-1-compliance-1-innovation-0

This report by a leading financial consultancy could not have come at a better time. Communication and information processing technologies are finally capable of fulfilling our vision of re-engineering the risk framework and risk-adjusting the financial system. The good news is this is underway, embedded in declarations of regulatory ambitions in recent consultative papers by the Bank for International Settlements and the Financial Stability Board (FSB). Even dates of industry adaption are presented and are reasonable. Now for the bad news. Delivering technology solutions is not going to be easy. The message from Celent is: that new thinking is needed and we need to start now. Early implementation dates start in 2016 and stretch into 2019.

Regulators and thought leaders are aligning to bring us a most sought-after rethink of both the fundamental techniques of our risk regime and the restructuring of the technology that supports it. After all, is not the financial system's risk regime dependent on solving the problem of business silos that prevent integrated systems across the enterprise and the failure of information technology in general to support the efficient processing and risk management needs of financial institutions?

The message of the Celent report is that the risk discipline is trapped by incremental thinking, overwhelmed by the immediate compliance needs of new regulations that appear almost daily, and dependent on IT departments for data from legacy systems that are not standardised and do not interoperate very well. At the same time, financial firms are being asked to address the apparently new paradigm thinking of their global risk regulators.

It has worsened over the years to where we now have the concept of banks and other financial conglomerates being 'too-big-to-fail' and 'too-complex-to-manage'. We need to fix it, or at least get the train on the right tracks so the journey ends at that point where information is accurate, integrated and fit for purpose. Innovation is needed and the consultants at Celent are providing the framework for technological innovation through this thought-provoking report.

At the same time, regulators themselves are making statements of needed 'adjustments' in thinking — a raft of recent consultative papers published most recently by the Bank of International Settlements (BIS) and the Financial Stability Board (FSB) all point towards innovative thinking around technology. The BIS has presented risk and data aggregation requirements which call for accounting and risk data to be reconciled; for data aggregation methods to be scrutinised; and for auditability of risk inputs from source to manifestation in risk reports and calculations. Regulators are to require this as part of their supervisory reviews beginning in 2016, not a very long time from now.

Comments on the BIS's consultative paper on balancing risk sensitivity, simplicity and comparability have just been posted to their website. These two papers, along with the earlier paper on alternatives to valuing trading book risk, where the BIS admitted that the risk regime established to reduce tail risk was defective, set a tone of innovation and change that Celent has picked up on. It offers in this report a next-step framework for innovative thinking around the new risk

regime's prescription for change and the technical implementations that are most critical to its implementation.

Celent asks firms to explore real transformation guided by strategic principles underpinned by the right IT practices, not by unsustainable quick fixes. It cautions that this is not likely to happen with incremental approaches and upgrades in hardware and software infrastructure alone. There is significant risk that technology spending will only focus on the immediate — regulatory change and compliance — but firms will require clever ways to bring new business ideas to life and enhance risk practices, operations and IT infrastructure to avoid playing catch-up.

Celent describes an innovation framework for risk management, whose key to innovative, paradigm-changing concepts is an architectural realignment of infrastructure, where the new technologies of in-memory databases and complex event processing are enablers of big data analytics for the new risk regime proposed by the BIS.

Celent's four-step model for innovation starts out challenging the conventional, asking why this has been done in a certain way and devising better solutions whose conceptualisation has been freed by encouraging technological solutions now available. If followed, this four-step model would truly be a game changer for the risk management function.

In aligning internal strategy with external regulator ambitions, Celent advises to reunify risk and finance data; assure capabilities to deliver to real-time requirements; and standardise on the use of the global identification systems being overseen by the FSB for legal entity identification, for traded instruments and contracts (the unique product identifier) and for the newly regulated swaps markets, the unique swaps identifier. With such global standards, the industry is now focusing on reducing the duplication in commoditised processes by outsourcing or creating third-party providers that can deliver cost efficiencies across the financial industry supply chain globally.

Celent reminds us of the significant shift to a new derivatives regime, where over-the-counter products are being moved into a regulated and automated environment. New collateral and risk techniques are need to properly price these products in this new environment.

Celent leaves us with a challenge, that innovation must lead to measurable changes — better ways to price risk; better metrics for risk-adjusted capital and incentive compensation; reduction in loss incidences; even the holy grail of metricising risk appetite and operational risk.

However, in order to achieve these objectives, Celent encourages us 'to develop the ability to see not only a micro view of the trees but also a macro view of the forest'. Financial firms need to foster innovation for potentially disruptive effect in the industry as a whole as well as create innovative disruptions within and across their own business silos. Celent concludes: 'The technologies, levers, and paradigms explored in this paper offer a taste of things to come. A new world awaits, and institutions will need to find fresh ways of being. We indeed live in interesting times.'

Allan D. Grody
Editorial Board

2013 Vol 8, 2

Book review: Risk Culture and Effective Risk Governance

Risk Culture and Effective Risk Governance
Edited by Patricia Jackson
Incisive Risk Information Limited, London; 2014; ISBN 978 1-782-72099-7 (pbk), 978 1-782-72192-5 (e-book); 328 pp; £145.00 (pbk), £110 (e-book)

This book is a collection of well-thought-out professional essays on risk culture — some from regulators, some from practitioners, some from consultants and academics. They all share a common theme but from different perspectives — they all recite the frameworks being put in place in banking purporting to incentivise whole organisations to improve their risk culture.

Changing risk culture is the new mantra for risk adjusting the financial system, displacing the worn-out term and yet unfulfilled promise of 'enterprise risk management'. It's a worthy new journey, but one cannot help ponder whether it too, like the theme of enterprise risk management, will also fail to bring the vulture culture that has been shown to populate the financial system to heel.

Improved performance management is suggested as a means to create proper incentives, which assumes that measures of financial performance were not properly aligned with proper incentives for improved risk culture. This, of course, is confirmed by the recent uncovering of fraud, collusion and scandal. The theme of the implementation of risk appetite frameworks (RAF) as the pathway to a sound risk culture is repeated throughout the many essays.

The starting point for such a global administrative framework is the Financial Stability Board's (FSB's) 'Principles for an effective risk appetite framework', which defines both framework-level statements of risk appetite and the associated quantitative metrics. From the book, sections of the paper are repeated, and is noteworthy to repeat here:

- Risk appetite statement: The articulation in written form of the aggregate level and types of risk that a financial institution is willing to accept, or to avoid, in order to achieve its business objectives. It includes qualitative statements as well as quantitative measures expressed relative to earnings, capital, risk measures, liquidity and other relevant measures as appropriate. It should also address more difficult to quantify risks such as reputation and conduct risks as well as money laundering and unethical practices.
- Risk appetite: The aggregate level and types of risk a financial institution is willing to assume within its risk capacity to achieve its strategic objectives and business plan.
- Risk limits: Quantitative measures based on forward-looking assumptions that allocate the financial institution's aggregate risk appetite statement (eg measure of loss or negative events) to business lines, legal entities as relevant, specific risk categories, concentrations and, as appropriate, other levels.

The FSB's aspirations, evident from the above statements, are fundamental to the establishment of a secure and sustainable global financial services industry. As pointed out in a passage in the book, however: 'Effective risk appetite statements must address the appropriate level of risks, and limits on the right risk measures will serve to help implement the statements.' And further, and most disconcerting, that 'directors and senior managers find it difficult to relate the specific limits, and that activity measured against those limits, to the desired risk management outcome'. This leads us back to the concept of first

getting enterprise risk management right, that is, defining the metrics (the limits) that can be used to assess the success or failure of the risk culture. The book references the definition of risk culture as defined in the FSB's 'Guidance on supervisory interaction with financial institutions on risk culture (a framework for assessing risk culture)' (italic added):

> 'the *norms of behavior* for individuals and groups within an organization that determine the collective *ability to identify* and understand, openly discuss and act on the organization's *current and future risk*.'[1]

To risk practitioners steeped in the science of risk metrics, determinants of a risk culture are typically assessed independently of such metrics according to '*the norms of behavior*. ..' following subjective assessment-based processes. The book is replete with approaches to setting norms of behaviour such as: setting a proper 'tone from the top'; 'independent assessment of the RAF'; 'involving employees in the definition of a new risk culture will improve understanding and implementation'; and creation of a SMR (senior management regime) for 'clarification and acceptance of the responsibilities of board directors, executives and non-executive, together with key below-board executives such as the head of internal audit and the chief risk officer'.

From the FSB's definition of risk culture again, however, more dependable and enduring determinants of a risk culture will become observable through an *'ability to identify ... current and future risk*'. It follows that financial firms and their supervisors must seek to establish a global administrative framework underpinned by an ability of firms to 'grade' their risk culture by establishing a quantitative floor upon which to make correlations of subjective framework statements to the risk metrics of individual institutions. To that end, the unfinished work of enterprise risk management must be a parallel goal.

To further the completion of that goal, a few essays concern themselves with data management, the essence of the FSB's risk culture definition of the 'collective ability to identify ... current and future risk'. The references are to the Basel Committee on Banking Supervision's paper, 'Principles for effective risk data aggregation and risk reporting' (referred to as BCBS 239). That paper, now set as a mandate for supervisory reviews beginning in 2016, recognises that banks' inability to properly identify and aggregate data across the many business silos within its enterprise risk management systems has left the financial system vulnerable to unaccounted and unobserved risks. A call for accounting-type controls over risk data is made in BCBS239, along with the ability to reconcile risk data to the books and records of the firm.

The book sheds little light on the potential of these frameworks falling short when trying to change the behaviour of smart, aggressive people. Changing people's desire to be first to the finish line for the prize of the large payday or the prestige of winning is embedded in individuals' characters. Such traits were and still are respected in banking. The risk culture that incentivises and monitors behaviours that focus on not losing the firm's or clients' money is not easily achieved if the same A-type personalities that populate our banks today are to be transformed by implementing a new risk culture.

Further, creating a risk culture where the once noble profession of banking is once again a respected and trusted profession will take time. The banker of tomorrow will recognise the significant role banking plays in global commerce and society's wellbeing. It may take a new generation of bankers to adhere to a new professional standard of conduct.

We are on a journey to risk adjust the financial system. It started a quarter of a century ago with Basel I. More work is needed to implement the goal of all the succeeding Basel directives, that of a comprehensive enterprise risk management framework. This will create the bedrock of a performance management system that can be used to assess the success

of the frameworks of risk culture that are described quite competently and completely in the compilations of essays in *Risk Culture and Effective Risk Governance*.

References

1 'Guidance on Supervisory Interaction with Financial Institutions on Risk Culture: A Framework for Assessing Risk Culture, available at http://www.financialstabilityboard.org/wpcontent/ uploads/140407.pdf

Allan D. Grody
Editorial Board

2013 Vol 8, 2

Editorial: The FSB, BCBS and SIFIs: Partnership required

After the financial crisis of 2007–2008, one new standards body, the G20's Financial Stability Board (FSB) and one old standards body, the Basel Committee on Banking Supervision (BCBS) were tasked with stabilising the global economy. They have since set an agenda for those they saw as the most significant participants in destabilising the global economy, systemically important financial institutions (SIFIs). It is now time that these global financial institutions organise themselves as a group to begin the dialogue with these two global standards setters. Setting the architecture for a risk-adjusted financial system and, in turn, setting each SIFI on the long journey to reengineer their own institutions should be a shared responsibility. A well-established partner of SIFIs, their auditors, should be invited to the table.

The lessons of the financial crisis taught us that global financial institutions are unrestrained by sovereign boundaries of regulation. It also revealed that regulators are critically dependent on accurate, timely and aggregatable data to observe risk building up in the financial system. Regulators were unable to see into the financial institutions that they were mandated to oversee.

Another, more fundamental observation is that the discipline of risk management had for too long been burdened by neglected technology improvements. The global financial industry's technical ecosystem looks more like a Rube Goldberg or Heath Robinson contraption, those ridiculously complicated machine depictions designed to accomplish a simple objective, than anything well thought through around good systems design.

Finally, evidence from the financial crisis supported known accounting deficiencies that life-threatening exposures to risk were accumulating in financial institutions, defying identification and quantification and, consequently, were not reported in audited financial statements. This represents both a risk quantification challenge and an accounting challenge. They are inextricably linked.

Since that time, regulators have put the global financial system under pressure to conform to a new regulatory order and to the new technologies of the information age. It is well understood that technology would be the enabler of these regulations. Regulatory change would finally be understood through the lens of the challenges to change enterprise risk, data and technology ecosystems that support these vast and complex global financial organisations, now relabelled as systemically important financial institutions (SIFIs).

To date SIFI designations have been applied to 30 global systemically important banks (G-SIBs) and nine global systemically important insurance companies (G-SIIs). The task of implementation of the new risk regime is being tested in SIFIs, where these two standard-setter's frameworks will also meet its ultimate test, and where 'the rubber will hit the technology road'.

Towards this end, the FSB and the BCBS have developed new frameworks to assist the downstream regulators in observing implementations and in offering remedies for deficiencies detected in the infrastructure of these large, global institutions. The BCBS has been busy reinventing the capital adequacy risk regime — presenting leverage ratios, liquidity measures and criticising their own acceptance of VaR market measures in favour of simpler and more

sensitive measures of risk under stress conditions. Stress tests are now being performed on an annual basis throughout most of Europe, the UK and the USA and more standardised benchmark measures are being pursued.

The FSB has set out to change the financial system fundamentally, prescribing criteria for improving risk culture and creating long-overdue data identification standards (the 'barcodes of finance') for all participants and all their products in the global financial supply chain. The BCBS is asking for these codes be used in their mandate for aggregating data for reporting risk and for calculating capital adequacy.

The FSB has invited auditors to play a more prominent role in assisting in its mandates to stabilise the global economy. Auditing firms, as a group, are the most knowledgeable and intimate external partners of financial institutions. They are called upon by governments and courts, by corporations and individuals, and by regulators to be fair-minded, objective analysers of facts and arbitrators of contentious issues.

The FSB's request for auditor involvement has drawn comparisons to the USA's Sarbanes Oxley (SOX) legislation and similar legislation that were enacted globally with the aim of reducing the risk of material misstatements in financial reporting. In a similar comparison, the BCBS issued new requirements for the accuracy of banks' risk data by requiring its reconciliation to a bank's accounting data, the latter being the usual domain of auditors.

A series of regulatory initiatives since then have surfaced to involve auditors even more directly in the global regulatory regime.

Germany has taken the lead in formally using independent auditors to assist in the supervision of their new risk mandates associated with the European swaps regulatory regime. The USA is suggesting a role for auditors in independence testing of the Volcker rule. The FSB has described a trusted third party to be interposed in their derivatives regulations for anonymising data where sovereign regulations require it, a natural extension of the auditors' trusted third party assurance role.

The FSB has defined accounting consolidation rules as the way to organise legal entities into their ultimate control hierarchies for determining counterparty risk in the FSB's evolving global identification system. That this system is properly provided with high-quality data on ownership and control structures is a natural activity for auditors: it is an extension of auditors' privileged need-to-know role with their SIFI clients; it recognises their accounting rules knowledge for consolidations for their materiality attestation function; and it can leverage their skills in third-party assurance services.

Let us follow German leadership in using auditors in the new swaps regime in the USA and other countries in SOX compliance in order to move the BCBS's and FSB's framework initiatives forward by extending accountants' and auditors' roles in risk oversight and, further, to involve the SIFIs and their Big 4 auditors in an organised group to interface with the FSB and the BCBS on matters of risk, data and technology.

SIFIs in such an interactive working group should be more inclined to define and embrace shared solutions. The FSB and BCBS, in turn, should be inclined to provide incentives of more implementation time and capital offsets for implementing such shared solutions, ones that make observing risk in these global organisations more transparent, more timely and more automated.

Allan D. Grody
President, Financial InterGroup, Editorial Board Member,
Journal of Risk Management in Financial Institutions

Contact Us

For more information on Risk Accounting please contact:

Allan D. Grody
Financial InterGroup - USA

169 East 69th Street - 18th floor
New York,
New York 10021
USA

Tele +1 212 585 0409
Cell +1 917 414 3608
Email agrody@financialintergroup.com

Peter J. Hughes
Financial InterGroup - UK

Lambs Green Lane
Wimborne,
BH21 3DN
UK

Tele +44 (0) 1202 842087
Mobile +44 (0) 7766 916541
Email peter.hughes@financialintergroup.com

Financial InterGroup

www.financialintergroup.com

Copyright © 2016 Financial InterGroup. All rights reserved.