"Consolidation, Conglomeration and Convergence"
Wharton Financial Institutions Center
Risk Roundtable

Sponsored by Oliver, Wyman & Company
April 19-20, 2001

On Thursday, April 19, 2001, risk practitioners and academics from across the world convened for the fourth annual Risk Roundtable, sponsored jointly by the Wharton Financial Institutions Center and the Oliver Wyman Institute, the academic liaison of Oliver, Wyman & Company. This year's conference, entitled "Consolidation, Conglomeration and Convergence," focused on the evolution of financial institutions as barriers to conglomeration continue to fall. As the 21st century begins, the trend towards consolidation of banking and insurance activities is stronger than ever, and risk measurement, risk management and regulation must evolve to incorporate this new paradigm.

Executive Summary

The conference began Thursday evening with a keynote address by Heidi Miller, Vice Chairman of Marsh, Inc. She reinforced the main message that consolidation and convergence of banking and insurance is going to happen – and gave several reasons why.

- globalization,
- decline of insurance premiums,
- overcapitalization in insurance,
- client demand for more sophisticated products, and
- the convergence of tools and techniques in capital markets.

The first session, titled "Risk and Return", took the contrarian perspective. Speakers pointed out that it is not at all clear that such conglomerate make economic sense; are there really economies of scale (bigger is cheaper) or scope (cross-sell)? Moreover, several speakers pointed out that conglomeration may actually increase risk.

"Regulatory Issues" were the focus of the second session. It is not at all clear how one might regulate such conglomerates given the different approaches and regulatory histories of banking and insurance. Furthermore, current regulation provides some adverse incentives to institutions, which may result in risk increase rather than reduction.

The third session concentrated on the "Convergence of Risk Measurement Tools across Industry Disciplines". The speakers questioned whether we really knew how to measure and price the risks in a conglomerate. There certainly are many challenges in harmonizing banking and insurance approaches. One speaker in particular pointed out challenges in measuring and accounting for a core risk management factor: correlations and dependence.

The last session considered "Risk Transfer Mechanisms: Traditional and Alternative". There are meaningful differences among institutional types, said the speakers, which will pose significant challenges to the convergence of markets and products.

Keynote Address, April 19

The conference began Thursday evening with a keynote address by **Heidi Miller**, Vice Chairman of Marsh, Inc. Miller focused on the convergence of capital market and insurance activities. While consolidation has largely been "in-market", forces such as globalization, decreasing spreads, overcapitalization in insurance and the convergence of tools and techniques in capital markets and insurance activities will lead to a strong push toward conglomeration across these two disciplines. In particular, Miller highlighted the similarities in financial engineering across insurance and capital markets and the products offered by these once quite dissimilar industries. This supply-side observation can only come about if they meet client needs, and indeed clients, mostly corporates, are demanding that more and more different kinds of risks be insured / hedged / transferred. "Enterprise-wide risk management solutions" becomes the umbrella term to capture this wide scope of needs and products.

Finally Miller pointed out that the bank-assurance model, prevalent in Europe, will become more common in the US. As a former CFO of Citigroup, her actions have certainly matched her rhetoric.

The Conference Day, April 20

Friday's agenda comprised four sessions, each of which consisted of brief presentations by leading academics and practitioners in the field:

1. Risk and Return
2. Regulatory Issues
3. Convergence of Risk Measurement Tools across Industry Disciplines
4. Risk Transfer Mechanisms: Traditional and Alternative.

The sessions were moderated by **Richard Herring**, Professor of International Banking and Co-Director of the Wharton Financial Institutions Center, and **Frank Diebold**, Professor of Economics and Statistics at the University of Pennsylvania and Founding Member of the Oliver, Wyman Institute. The following is a summary of the each of the sessions.

Session 1: Risk and Return

James Stone, Chairman of the Plymouth Rock Company, began the first session with a discussion of the politics behind conglomeration. Government is easily co-opted by money to favor old over new, established over up-start, big over small. Stone argued that economies of scale are not significant and, in fact, there may be diseconomies of scale even at modest size levels for insurance companies. Furthermore, the synergies between banks and insurers are not enough to drive conglomeration. On the contrary, according to Stone, political reasons are overlooked in the trend toward conglomeration. He cites the agency problem of significant increases in senior executive compensation in larger companies and the increase in political capital for larger institutions as two key drivers of the trend. Consolidation is at best economically neutral and politically harmful, creating opportunities for small innovators to do well.

David Kelso, Executive Vice President and CFO of Chubb Corporation, spoke about capital optimization for large financial institutions. Kelso noted the conflicting pressures on the

institution from shareholders who prefer less capital to increase profitability to regulators who prefer more capital to ensure a higher solvency for the institution. He discussed the need to balance the capital you have (Risk-Bearing Capital) and the capital you need (Risk-Adjusted Capital), and described the steps necessary to take to optimize an institution's capital. In particular, Kelso noted how certain businesses need to maintain a credit rating floor to be viable (e.g. financial guarantees), and how these considerations must be incorporated into the capital optimization process. In short, Kelso elegantly summarized the shareholder vs. debtholder conflict in a financial institution.

Richard Zeckhauser, Professor of Political Economy at the Kennedy School of Government at Harvard University, questioned whether consolidation actually reduces risk. He pointed to factors including the proliferation of agency problems, loss of specialized knowledge, and mispricing of risk as factors that may increase rather than decrease risk. In addition, as argued by Alliance Theory, consolidation makes players more vulnerable to sacrificing stability for the system, thereby adding risk to the institution, as evidenced by the big banks bailing out LTCM just a few years ago. Big players are called upon to bail out the little guys. In short, scale does not necessarily reduce risk.

René Stulz, Professor of Banking and Monetary Economics at Ohio State University, examined the risk involved behind a merger, showing how Cash-Flow-at-Risk (CFAR) models are better for examining deals than NPV analysis because they take into account the uncertainty of expected cash flows. This uncertainty affects risk capital, which has an associated cost attached to it. There are other papers that show that the shock to one large unit negatively affects other units, thereby increasing risk post-merger. The costs of corporate diversification may outweigh the benefits, and there is little, if any, evidence to support the idea that the risk management benefits of diversifying mergers are worth it. Stulz pointed out that by and large, knowledge about risk type is inversely proportional to risk; market risk is relatively well understood but is much smaller than the poorly understood credit risk.

Session 1 Discussion

An echoing from the floor regarding the skepticism about the merits of conglomeration, of bigger-is-better. What role does hubris play? CEO ego? Executive compensation windfalls? Several individuals commented that such conglomeration indeed has anti-competitive consequences. Perhaps there is simply too much capital in the industry, and instead of giving some back to shareholders the capital is used to buy other companies.

Session 2: Regulatory Issues

Philip Strahan, Visiting Professor of Finance at MIT and Vice President in the Research and Market Analysis Group of the Federal Reserve Bank of New York, discussed the motivation for consolidation and the regulatory response to consolidation. With interstate banking, few limits to competition, a common currency in Europe, amongst other factors, the stage is set for greater consolidation. While consolidation may diversify risks, conglomeration leads to more "Too-Big-To-Let-Fail" (TBTLF) banks. The portfolio of the financial institution may therefore be more diversified, but the regulator's portfolio becomes more concentrated. In addition, increased competition leads to a greater incentive to gamble. Government responds with risk management and market discipline initiatives, but these responses may not be enough since consolidation undermines market discipline and risk management systems are not likely to be used to reduce risk.

Paul Kupiec, Deputy Division Chief of Banking Supervision and Regulation at the International Monetary Fund, discussed the New Basle Capital Accord (2001) and identified unintended consequences of the proposed regulations. In particular, Kupiec highlighted how institutions that are least equipped to measure credit risks have incentives to take on more credit risk, and those that measure more accurately and manage better will take on less credit risk, as the IRB approach is more punitive for lower rated than for unrated credits. In addition, due to maturity effects (the new accord assumes a 3-year average credit maturity), the new accord gives banks a strong incentive to extend high-quality long-maturity credit under the Foundation IRB approach. Such a concentration in lending will not enhance banks' stability. Kupiec discusses several other anomalies of the new accord in his paper, "The New Basle Accord: The Devil is in the (Calibration) Details."

Anthony Santomero, President of the Federal Reserve Bank of Philadelphia, discussed how regulatory response would, by design, always lag behind the evolution of the financial institutions industry. Specifically, while there has been a steady convergence of products, there has not been a concomitant convergence of regulatory design. As a corollary, he suggested that the expected regulatory oversight would always be greater than the actual regulatory oversight. Santomero also discussed a possible reason why we have not witnessed an onslaught of conglomeration across the banking and insurance industries in the wake of Gramm-Leach-Bliley (GLB), namely because measures have been taken prior to its enactment for institutions to get around the restrictions it alleviated.

Alan Murray, Vice President at Moody's, gave us his perspective on financial services modernization and risk analytics. Murray does not expect and increase in M&A activity following the passage of GLB for many of the reasons mentioned in the first session. The likely exception would be banking and life insurance. Here the biggest risk for the life insurer, market / asset-liability management, is very familiar territory for a bank. Moreover, the demand-side opportunities are likely rich due to demographic trends (savings & investment vs. borrowing). By contrast, banks and P&C insurers are not a logical combination. Broadly banks will be looking more for fee-based business which don't require risk capital.

Session 2 Discussion

Much of this sessions comments fly in the face of Heidi Miller's prediction of more rather than less banking-insurance conglomeration. The panel re-iterated the economic potential for banking and life insurance mergers, but that cross-sell remains an as-yet unfulfilled promise. Moreover, the diversification benefits hoped for by the merging entities may indeed be overly optimistic. An audience member also noted that BIS capital regulation is only concerned with assets whereas insurance capital regulation touches both sides of the balance sheet.

Session 3: Convergence of Risk Measurement Tools across Industry Disciplines

Ugur Koyluoglu, Director at Oliver, Wyman & Company, discussed the convergence of risk measurement approaches for credit portfolios. In particular, his discussion highlighted the fact that seemingly disparate approaches to portfolio risk measurement, including the Merton approach, the econometric approach and the actuarial approach actually fit into a common general framework. For certain parameterizations of each of the three models, the results are remarkably similar. P&C RAROC is an example of banking risk methodology being applied in insurance while the credit portfolio model Credit Risk Plus from CSFB is exemplary of actuarial (insurance) methodology solving a banking problem.

Michel Dacorogna, of the Dynamic Financial Analysis (DFA) Group at Zurich Re, discussed the DFA methodology as a comprehensive approach to managing risks. DFA is designed to solve the problems of re-insurance, capital allocation and investment strategy. DFA involves simulating the dynamic projection of cash flows or P&L. The procedure is data-intensive but offers a combination of financial analysis and risk modeling. Important considerations are the quality of the econometric generators underlying the simulations along with the time horizon, as very long-term businesses (such as insurance) may not reap the benefits to the extent that shorter horizon businesses may. Dacorogna provides recent work on modeling the impact of FX risks on reinsurance decisions using DFA.

Paul Embrechts, Professor of Mathematics at the Swiss Federal Institute of Technology, discussed how correlation and dependence are not well understood even in financial circles. Correlation is a very specific type of linear dependence, whereas it is often taken to describe other, non-linear dependencies as well. Embrechts introduced copulas, measures of dependence that go beyond simple linear dependence. Using copulas, he described how "truths" regarding correlation, such as the risk of a portfolio of risks never exceeding the sum of the individual risks, may indeed be violated when other measures of dependence are considered. This area of research is especially relevant in insurance models, where multivariate normality is not always the norm.

Donald Mango, Vice President at American Re, discussed the challenges to convergence across the banking and insurance industries. He cited the disparity in time scales along with the limited, illiquid insurance markets and the non-discrete nature of general liability as hindrances to convergence, but added that similarities in modeling approaches and product behavior will ease conglomeration. Mango also challenged the information content of pricing, charging that if all market participants are looking to prices for information content, who is providing the content?

Philippe Jorion, Professor of Finance at UC-Irvine, stressed how risks cannot be viewed in isolation and that an enterprise-wide risk management (ERM) system needs to identify, measure and manage risks concurrently. Jorion discussed how the presence of ERM will help to facilitate convergence. He noted, however, the importance of time horizon in measuring risk, an issue of particular importance in the convergence of banking and insurance. For non-financial companies, Jorion discussed the Cash-Flow-at-Risk (CFAR) approach to risk measurement, and his presentation then touched on how these risk measurement and management tasks are the most fundamental functions of the treasurer/CFO.

Session 3 Discussion

The lack of trading and hence market prices makes "valuation" of insurance products very difficult, especially post-issue. The panel emphasized the importance of stress testing and scenario analysis as critical supplements to standard risk measurement for effective risk management. Both members of the audience and the panel stressed the difficulty of reconciling the different time horizons across risk types: market is typically 1-10 days, credit 1 year, insurance 5-35+ years.

Session 4: Risk Transfer Mechanisms: Traditional and Alternative

Gary Gorton, Professor of Finance at the Wharton School, discussed risk transfer opportunities, specifically outlining the mechanics of arbitrage CBO's. He explained how these securitizations can be viewed as long and short positions in underlying credit instruments and how reinsurers are often on the short side of the transaction. There are still difficulties in arranging these transactions, specifically with respect to agency problems in pricing on the long side, and

calculating the loss distribution and hence pricing on the short side.

Neil Chriss, President and Chief Operating Officer of ICor Brokerage, discussed the evolution of electronic marketplace, tracing its history and its impact. The evolution of these electronic marketplaces provides the groundwork for advanced risk transfer mechanisms. Chriss also discussed the relationship of market structure and regulation, something that will continue to progress as the electronic marketplace continues to expand its breadth.

Robert Arvanitis, Chief Executive Officer of Risk Finance Advisors, talked about the continued unbundling of risks. As risks are better understood and pieced apart, new forms of capital structure will emerge. The key, therefore, is to identify, evaluate and quantify the risks and to identify trading opportunities for risk mitigation. Arvanitis also introduced the "Low Beta Asset Class" as a natural outcome of investor preferences. These assets play an important part in risk transfer.

Peter Nakada, Vice President of Business Development at Erisk, discussed the importance of understanding firmwide risk and integrated risk measurement techniques. He then focused on the rationale for risk transfer. In the financial services industry, one institution's excess risk is likely to be another institution's diversifying risk. This forms the strong foundation for the transfer of risk, and the mechanisms for doing so are in place and evolving. Nakada discussed the cost-benefit analysis of risk transfer decisions, citing the inclusion of important factors such as implied Risk-Adjusted Return on Capital (RAROC), and earnings volatility v. expected earnings.