



## MARK J. NOWAKOWSKI

*Principal, Market and Treasury Risk; Financial Instruments and Derivative Resource*

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### Function and Specialization

Mark is a Principal in KPMG LLP's Advisory Practice in the Atlanta office, and has over 17 years of business experience in asset management, risk management, and banking.

### Representative Clients

- Ally Bank (fka GMAC)
- American Express
- Banco Santander
- Barclays
- Bank of America
- BB&T
- CIBC
- Credit Suisse / CSFB
- Capital One
- Citigroup
- DaimlerChrysler
- Fannie Mae; Freddie Mac; FHLBanks (Atlanta, Chicago, Dallas, Des Moines, SF, Topeka)
- Genworth
- Goldman Sachs
- JPMorgan Chase
- Regions
- State Street
- SunTrust
- Swiss Re
- Union Bank (fka UBOC)
- Wachovia / Wells Fargo

### Education, Licenses & Certifications

- BA, Mathematics, with honors, from Harvard College
- Fulbright Fellow in 1995-6, in mathematics at the University of Warsaw, Poland
- Ph.D. program in mathematics at The University of California at Berkeley
- Series 3, 7, 55, and 63 registrations

### Background

Mark is a Principal in KPMG's Atlanta office, with over 17 years of experience in financial services. Mark's focus is on financial modeling, derivatives, and quantitative analysis in capital markets and banking, with extensive experience in modeling derivatives, mortgage products, asset-liability management, and real-estate risk. Mark has worked with numerous financial institutions on model risk governance issues and model validation, in particular since the issuance of OCC 2011-12 / Fed SR 11-7 (*Supervisory Guidance on Model Risk Management*). He has worked on CCAR and Capital Stress Testing process and model design, documentation, and validation. His experience includes a variety of financial services clients, including banks, insurance and re-insurance companies, and GSEs. Mark has worked in portfolio management and trading, risk measurement and risk management, including VaR, economic and regulatory capital, and counterparty credit risk. He is also familiar with fundamental financial statement analysis and capital structure arbitrage, including credit default swaps and credit derivatives.

### Professional and Industry Experience

Prior to joining KPMG LLP, Mark worked for Paloma Partners, where he was a portfolio manager responsible for trading, development, and implementation of quantitatively-driven equity trading strategies. Prior to that, Mark worked in asset management at Merrill Lynch and at Lazard Asset Management developing market-neutral equity strategies and enhanced index products. Mark also worked in the Market Risk Management group at Credit Suisse First Boston, specializing in risk for real-estate portfolios and mortgage-backed securities as well as other fixed income trading areas.

- Served as Subject Matter Professional (SMP) on a variety of corporate treasury, internal audit, and KPMG audit engagements around risk management, trading, valuation, and hedge accounting issues.
- Validation of RiskMetrics used for VaR (both Historical Simulation and Monte-Carlo Simulation) and Counterparty Credit Exposure, for Interest Rate Derivatives, Foreign Exchange Options, Fixed Income, and Energy/Commodity Derivatives, for a \$50+ billion regional bank.
- Validated Counterparty Exposure Model (proprietary, developed in MatLab) at a GSE with over \$200b notional derivatives exposure. Key Outputs included EE, PFE, EAD, current exposure.
- Review and Board presentation on derivative counterparty exposure and risk management, including post-Lehman analysis and recommendations for future state improvements
- Validation of QRM software model used for mortgage valuation & pipeline hedging, and proprietary pricing models, for a major US residential mortgage lender. Similar engagement at a major US bank using proprietary model/software.
- Model Validation of MIAC & DebtX models used by two GSEs in valuing whole loan collateral (commercial & residential) to secure borrowings to member institutions. Also included S&P LEVELs and ADCO prepayment module.
- Model Review – Asset-Liability Management / Market Risk:
  - Model Validation – QRM, Principia, Polypaths used in financial instrument valuation, risk management, and pre-trade analysis at \$60 billion GSE. Included AFT prepayment module.



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- Model Validation – ZMDesk model with AFT prepayment used in financial instrument & derivative valuation, risk sensitivity, and net income simulation (\$50 billion GSE)
- Model Validation of QRM v12.2 and v14 ALM software, with both ADCO & AFT prepayment modules, for \$100+ billion financial services institutions
- review/validation of Bancware 5 ALM software for a \$50+ billion regional bank.
- Followed OCC-2000-16 methodology for model review for a \$60+ billion financial services institution using PALMS and Algorithmics Asset-Liability Management.
- Model Validation of Bancware 4 market value calculations for a \$150+ billion top-10 commercial US bank.
- Model Review: Model Validation of the Principia valuation engine used for structured products, debt issuance, and hedging instruments (derivatives including swaps, caps, floors, etc.) for a \$200+ billion bank.
- Economic & Regulatory Capital – Manager on a \$150+ billion top-10 US Commercial Bank responding to regulatory requirements for stress testing and economic capital adequacy. Included refining 20+ enterprise-wide workstreams, which expanded to 15 additional credit-focused workstreams and project management for the effort.
- Model Documentation: managed the regulatory response for a major global Financial Institution seeking to document its proprietary economic capital framework for interest rate risk, as well as the QRM model for interest rate risk and liability characterization.
- FAS 157 and 159 (Fair Value Measurement and Fair Value Option) implementation projects for several major insurance and financial services client including investments, derivatives, and insurance areas.
- Manager reviewing and assisting balance sheet management operations for a \$100 billion asset, \$350+ million revenue financial services institution, including review of debt issuance, asset acquisition, and hedging including FAS 133 accounting issues.
- Manager coordinating Financial Risk Management group's external audit assistance for a large global manufacturer's multi-billion dollar derivatives portfolio valuation, including validation of valuations performed in Quantum and Trema systems.
- Manager on a Sarbanes-Oxley 404 engagement for a \$150+ billion financial services company focusing on mortgage related activities, derivatives and hedging. Included lending, mortgage acquisition programs, issuance of debt, liquidity management, investing activities, accounting.
- Internal Audit Assistance:
  - Day-to-day manager for the co-sourced audits of the Market Risk & Interest Rate Risk Management areas of a multi-billion dollar GSE with a large mortgage acquisition operation, including investments, funding (liquidity and liability management), and derivatives (portfolio and asset-liability management), 2005-2010. Included BlackRock, Polypaths, and proprietary models.
  - Subject Matter Professional for RAROC group of an approximately \$100 billion commercial bank, including review of Market Risk, Credit

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Risk, and Operational Risk used for Capital-at-Risk, and outputs used for loan pricing and economic capital evaluations of business lines.

- Engagement Manager for two internal audit assistance projects for the liquidity management areas of separate \$100+ billion institutions (both in 2005Q4).
- Due diligence for a major UK firm acquiring a US Credit Card Issuer/Bank, assisting in evaluating Treasury, securitization, and certain derivative transaction.
- Assistance for collateral reviews for a large financial services company applying statistical sampling techniques to gain significant cost savings and increased confidence, quantification, and understanding of collateral deficiencies.
- Co-leader of training to an external client on volatility, correlation, and applications of statistical techniques to derivatives modeling and pricing, for a firm planning to expand its trading operations; FAS 133 presentation/overview to a major commercial bank.
- Assisted in derivatives valuation review for a large investment bank seeking a third-party pricing where discrepancies existed between the bank's pricing systems and trader's mark-to-market.

### ***Paloma Partners/Telic Management; Portfolio Manager, 2002 – 2004***

- Developed, implemented, and traded quantitative equity, statistical arbitrage, index arbitrage strategies, over \$100 million long-side notional (long-short market neutral). These included working on existing high-frequency trading models using incoming tick data; developing and implementing a daily trading model with several hundred million per side notional capacity; developing and testing ETF/futures/underlying strategies; testing and trading various index related strategies.

### ***Merrill Lynch Investment Managers; VP, Quantitative Advisors 2001***

- Developed, implemented, and traded quantitative and statistical arbitrage strategies, and capitalized on index changes (pre- and post- announcement and pre- and post- change), for global enhanced index (\$1.5 billion under management in Global, Regional, and Single-Country mandates) and for the Merrill Lynch Equity Arbitrage hedge fund (\$1.2 billion unlevered).

### ***Lazard Frères Asset Management – Associate, Quantitative Investment Management Group, 1999 – 2001***

- Responsible for development, implementation of enhanced index strategy. Developed a proprietary model for alpha generation, quantifying valuation, momentum, growth, and other factors and optimizing weights for a US Large Cap universe. Used Barra and Northfield software to create portfolios and rebalance to maximize utility as a function of expected returns, risk, and trading costs. Expansion of this work to Global (MSCI EAFE and World) benchmarks and development of risk-structured products with active overlay.

### ***Credit Suisse First Boston – Risk Analyst, Risk Management Group, 1997 – 1999***

- *Mortgage products risk* (\$10+ billion whole loan securitization portfolio; pass-throughs; I/Os and P/Os; PACs; etc): quantified real estate market risk based on unsmoothing of historical data and using repricing and historical



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simulation, used for Value-at-Risk, provisioning for potential losses, scenario analysis; development of daily risk reports & database for Principal Transaction Group, MBS desk, and Asset-Backed desk. Fixed Income risk (Governments prop & market making, Corporates, High Yield, Distressed Securities, Liability Management desks): development and refinement of risk reports including asset class correlation, added fx risk where not previously reported including cross-currency exotic options, and overnight special rate moves for liability management (repo desk). Modified Monte Carlo simulation to estimate the probabilistic losses on corporate and high yield bonds related to credit events.

- *Global Equities risk* (Cash/Block trading, Listed Derivatives Proprietary Trading Strategies, Convertibles/Warrants (both market making and proprietary trading desks), Index Arbitrage, Quantitative Trading, and Risk Arbitrage): Development of entire system for all of CSFB Equities, globally, improving the methodology, accuracy, and reconciliation of all regions and product areas. Methodology for Value-at-Risk was variance-covariance based on asset classes including equity market risk to major stock indices, gamma/convexity risk, vega/volatility risk, first-order interest rate and fx risks, and security specific risk based on issuer. Also developed other reports such as country exposure, scenario analyses, detail and summary reports.

### Technical Skills

Working knowledge of Bloomberg Analytics, @Risk, Algorithmics RiskWatch, FinCad, QRM, RiskMetrics, SunGard BancWare

### Publications, Speaking Engagements, Service

- KPMG Advisory University Instructor (Model Validation, Business of Banking); Derivative Training Sessions for KPMG Advisory clients
- Serve on the Board of Young Audiences, Woodruff Arts Center (Promoting Arts in Education with a focus on at-risk and underserved school districts)