Non-Maturity Deposit Modeling Considerations

Depository institutions are prone to believe that their deposits have above-average value, that this value is intrinsic and impervious to rising interest rates, above-market asset growth rates and desperate competitors. As a result, they are not prepared for the adverse impact of rising interest rates on earnings and economic value.

Effective management of a bank balance sheet requires that we be able to answer two questions:

1) How does the bank make money?
2) How much risk (IRR and LR in particular) does the bank have?

The answers to these questions motivate a long list of important business management processes:

- Financial reporting
- Regulatory reporting
- Risk management and balance sheet hedging
- Product structuring, pricing and management
- Budgeting/forecasting
- Profitability and compensation management
- Strategic balance sheet management
- Mergers and acquisitions

To answer the two questions, it is necessary to formalize <u>opinions</u> about the behavior of the various deposits which fund the balance sheet. If the opinions are correct, then our answers will lead to effective business management processes, but if the opinions are incorrect (and time will tell whether or not they are), the answers to the two questions will also be incorrect. This means that all the business management processes will suffer in one way or another, e.g. the budget will not be realized, people will be compensated to do things that are not good for the bank or risks will be created that are not acknowledged.

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Acknowledging and addressing the siloed approach to risk and balance sheet management

At most banks, many business management processes operate independently from one another: Different functional areas within the bank handle their particular responsibilities in an uncoordinated fashion; each has its own models, analytics and reports which are used to address a very specific and narrow set of problems irrespective of how other functional areas are addressing their own particular problems. What seemingly makes sense in one context may clearly not in another, but without a detailed and frequent reconciliation of the models, analytics and reports used in each of the business management processes, discrepancies are likely to persist. To obviate the need for such a reconciliation and eliminate the possibility of discrepancies, key models and assumptions should be developed jointly and applied consistently across all balance sheet management function. This is particularly true for non-maturity deposits.

This does not mean that modeling solutions necessarily need to be extremely complex, but the behavioral assumptions do need to be robust to a broad range of economic environments and business situations.

What we need to know about deposits

Whether we are considering the value (earnings contribution) or risk associated with deposits, we are speaking to the *duration* and *liquidity* value of the deposits. Regardless of the context, the behavioral assumptions which give rise to these characteristics should be developed and applied consistently; a deposit cannot be valuable in one context but not in another.

The behavioral attributes of a deposit which correlate to its value to the organization are the same attributes which speak to its role in IRR and LR management. These attributes bust be clearly defined and well-understood throughout the organization.

Deposit product behaviors are not stable: customer preferences change through time, the business cycle evolves, competitive market dynamics change (within the bank and non-bank financial services space) and technology changes.

Modelers tend to begin, and end, with an analysis of *historical* data. A story of past behaviors is developed and *is assumed to hold in the future*. A dangerous assumption is made as the pivot from the past to the future occurs.

Even though the world is undeniably multivariate, most business function only consider a single or limited set of explanatory factors or business conditions.

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DGA has developed a unique and comprehensive approach to modeling NMDs which is specifically designed to align key behavioral assumptions used in risk management, profitability management and product management processes. Only by aligning these processes and monitoring them closely can an organization establish meaningful measures of deposit value.

Key Design Features:

- Modeling hierarchy recommendations
- Dynamic core/non-core algorithm
- Beta, decay and non-core analytics
- Assumption monitoring
- Effective duration estimates
- Complete times series of FTP rates and spreads
- ALM model feeds
- Real-time product pricing considerations

For more information, see nmdmodel.com.

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About David Green Advisors

DGA is a boutique advisory firm led by David Green, PhD, CFA. Specializing in risk and profitability management, DGA advises in all aspects of framework development, including policies, quantitative models, operational and management processes and governance structures. A leading provider of risk and profitability workshops around the globe, DGA offers a unique blend of advisory services and educational training that maximizes knowledge transfer and ensures practical consistency throughout the organization.

Areas of Specialization:

- Asset/Liability Management
- Governance Responsibilities of ALCO
- Interest Rate Risk Management
- Liquidity Risk Management
- Funds Transfer Pricing
- Behavioral Modeling of Loans and Non-Maturity Deposits
- Quantitative Model Development, Calibration and Implementation
- Risk and Profitability Management Frameworks
- Executive Training on Risk and Profitability Management
- Live and Web-based Workshops

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Dr. Green is motivated by the understanding that key risk and profitability management functions at a depository institution must be fully aligned in order that the story of how the firm makes money be robust to the dynamics of the business cycle; absent proper alignment, measures of business segment- and product-level profitability will be incorrect and unstable, challenging effective management of the organization.

About David Green, PhD, CFA

Dr. Green is a leading expert in risk and profitability management. His expertise derives from lessons learned in a >20 year career spanning banking, bank regulation, consulting and software development. Prior to consulting for the last decade, he served as the Treasurer at BankUnited, the largest bank headquartered in Florida, where he was responsible for ALM, FTP, the investment portfolio, funding and derivatives as well as secondary marketing. Prior to this, he was the A/L Manager at SunTrust Bank in Atlanta; there he built and managed all of the static and stochastic interest rate risk models for the bank and worked to align a number of business functions including budgeting/forecasting, funds transfer pricing and strategic balance sheet management.

Dr. Green is a former Chairman of the Georgia Bankers Association's A/L Management Committee. He served as a Bank Examiner at the Federal Reserve Bank of Atlanta, where he also spent two years in research while completing his Ph.D. He was Chairman of SunGard/Bancware's US Client Advisory Council for many years.

Dr. Green holds a Ph.D. in Economics from Georgia State University, a BS in Applied Mathematics from Georgia Tech and is a CFA charter holder. He is a frequent speaker at banking and risk management conferences.

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