

stress since collateralized funding is more readily available during difficult periods. This valuable source of funding is best preserved for use when you need it the most, not drawn down because of convenience.

If you use collateralized funding, prioritize your collateral by providing the least liquid forms of collateral, (generally commercial real estate and home equity loans), to the funding source that will accept them. Take the time now, while funding is plentiful, to work with your FHLB to use these less liquid assets as collateral so you are not scrambling to use them when additional funding is needed.

You can also use reciprocal deposit relationships that allow you to exchange deposits with other FDIC insured institutions. This gives your customer the benefit of FDIC insurance protection while allowing you to avoid pledging liquid assets as collateral. These funds have the added benefit of not being considered brokered deposits under new legislation that was recently passed by Congress.

Lastly, consider using FHLB letters of credit as collateral for funding sources that will accept them, generally public funds. This strategy keeps your assets unencumbered, quantifies the cost of collateral and gives you more flexibility to manage your assets.

Keep your liquidity powder dry by not pledging or using your most liquid forms of collateral such as treasuries, agencies and mortgage backed securities. If liquidity becomes tighter in the future, you will benefit from having easily pledgeable securities available as a source of liquidity.

Use Targeted Loan Sales. Another source of untapped liquidity is the loan portfolio. It is easy to address liquidity and margin pressures by having your loan portfolio reviewed to establish marketability and to better understand potential hidden risks. You can then execute on the marketable value of the portfolio.

Many depositories make loans that they originate for sale (typically mortgages, auto loans or other consumer loans). Other depositories have exhausted balance sheet capacity to add more loans, in which case they can use a similar sell strategy for new loan production or loans already on the books. In either case, this strategy allows them to create fee income, reduce capital usage and manage liquidity while continuing to meet the needs of their customers.

For depositories that need to improve capital levels or create additional liquidity, loan sales provide a viable solution. Loan sales also provide a method to reduce credit concentrations and/or reduce interest rate risk.

Time to be Proactive. It is easy to discount liquidity concerns when access to liquidity is still plentiful. Historically, the market tends to provide liquidity in counter-cyclic ways; too much when rates are low and too little as rates rise. We are starting to see signs that loan

growth and earnings momentum may be constrained as liquidity shifts out of the banking system. With consumer and business confidence returning to all-time highs, the risk aversion prevalent since the last financial crisis has been replaced with a more proactive investment approach by depositors. Such a proactive investment approach will naturally shift excess liquidity built-up in deposits back into higher yielding alternatives. Our ideas for managing liquidity are designed to help your financial institution overcome these liquidity constraints and continue to meet the needs of your stakeholders.

— Rick Redmond
Vining Sparks IBG

On Attrition

Many consulting firms serving the banking industry conduct analyses of *decay* or *attrition* rates associated with non-maturity deposit (NMD) products.

The demand for these services is frequently prompted by bank examiners who require attrition assumptions to support the measurement of Economic Value of Equity (EVE) of the NMD products on bank balance sheets. Larger banks with the resources to perform these analyses internally do so, but there are many banks that either don't know how to perform these analyses or don't have the resources to perform them.

As frequent providers of attrition analysis to banks, we have identified several challenges to the validity of current industry practice. We identify these in this paper and provide a simple and cost-effective alternative. These objections are:

- *Cost.* Like any process, models and their output have a *life cycle of ownership* that includes many factors beyond their sticker price. Developing RFPs, identifying and qualifying vendors, obtaining data, legal expenses, project management, and report acceptance impose internal costs on banks that can far exceed the direct expense of an attrition analysis.
- *Inconsistency.* Banks policies frequently prohibit reliance on a single consulting firm to conduct sequential attrition studies. In addition to limiting the potential cost savings available from a multi-year contract, such policies can generate *methodology risk* that arises when different consulting firms select data sets with longer or shorter histories or employ valid but differing methodologies to estimate attrition rates.

For example, some consultants provide a single decay rate per product, while others may provide a vector of rates associated with the age of accounts. Comparing, reconciling and understanding these various results can be a complex and expensive undertaking.

- *Transparency and Ownership.* The same time and expense pressures that cause banks to employ consultants for specialized deposit analytics can lead them to accept the resulting analysis and estimates without fully investigating how they were derived and their proper application within the bank. Not infrequently, results are judged more on their packaging and acceptance to regulators than the actual method and content utilized to estimate attrition rates.

The process limits transparency and ownership and encourages deference to *black boxes*. In particular, when econometric techniques are utilized to estimate attrition rates, the resulting estimates can vary depending on the data history provided, how the data are organized, which assumptions and equations are used to estimate attrition, and even the software utilized to estimate the equations. Frequently these factors are neither reported by consultants nor evaluated by banks.

In addition, the alternative to black box acceptance tends to be a high degree of overrides of vendor results when management doesn't *agree* without sufficient evidence or justification for the recommended changes in attrition rates.

- *Validity.* Banks typically engage consultants for attrition studies infrequently – every second or even third year is typical. In the many studies that we have performed, we have found attrition rates themselves are relatively stable for most product age cohorts over this period, excluding the more recently opened accounts.

The same is not true for the age distribution of the accounts and balances, which can change materially over a two- to three-year period. In turn, these changes can trigger material changes in inputs into the ALM systems, and in some cases to risk limit violations.

More frequent and more refined adjustments to attrition factors avoids these kinds of costly outcomes.

THE ATTRITION DASHBOARD

We have developed and recommend to our clients adoption of an alternative approach that reduces or eliminates these problems entirely.

We advise and assist our client banks to develop and maintain an *attrition dashboard* that enables risk managers to monitor attrition by product-based age cohorts. Based on readily available bank data, the attrition can be easily tracked and updated to near-real-time using a fraction of the resources currently consumed in the third-party process.

We have also found that when adjustments are made they are usually partial typically involving only a small selection of attrition factors. More importantly, when adjustments to the assumed attrition rates are made, they are approved and understood by members of bank governance committees.

This article describes how to create and maintain the Attrition Dashboard.

DATA

While the amount of available historical deposit data varies by bank, we have found that almost all banks have sufficient data to conduct analyses of attrition rates by product.¹ The key data fields are: account numbers, month end balances, opening dates, and product codes. Other data may be in the files (e.g., interest expense) but they are not necessary to track account closings.

Some files have closing dates in them. Some do not. If they don't, calculation of account closings can be inferred from the disappearance (first monthly absence) of particular account number.

Product Code Mappings to Current Product Definitions. Deposit data files contain many more product codes than are modeled separately in ALM systems. Typically risk modelers are already mapping current product codes the consolidated product definitions in the chart of accounts of their ALM models.

Occasionally, older product codes can be a challenge. We have always been able to map product codes that may no longer be in use to product codes that are, but results are dependent on whether IT (or other) departments within the bank have maintained records historical product codes and product features.

Calculating Matrix I: Open Accounts by Month and Age. The next step towards creation of an Attrition Dashboard is the creation and population of a two-dimensional matrix for each product. The first dimension is reporting month and the second dimension is age of accounts. The matrix is filled by counting the number of accounts by product that are reported as active at month-end, and then sorting them by age with the last value being sufficiently large (e.g., 360) to capture the oldest accounts.

¹ The one exception appears to be when banks have merged and the key data items are lost in the transfer of historical deposit data.

Calculating Matrix II: Closed Accounts by Month and Age. If the data file contains closing dates² count the number of accounts that were closed and distribute them in same way as Matrix I. If closing dates are not included, then count the number of accounts that were in the file in month t and then absent in month t+1.³

Choosing Appropriate Age Cohorts by Product. It is unnecessary to define an age cohort as a single month. But there is no hard and fast rule regarding what ages to include in each cohort. We have found the following groupings to be sufficient basis for accurate measurement and monitoring for most products:

Age Cohorts We Have Used:

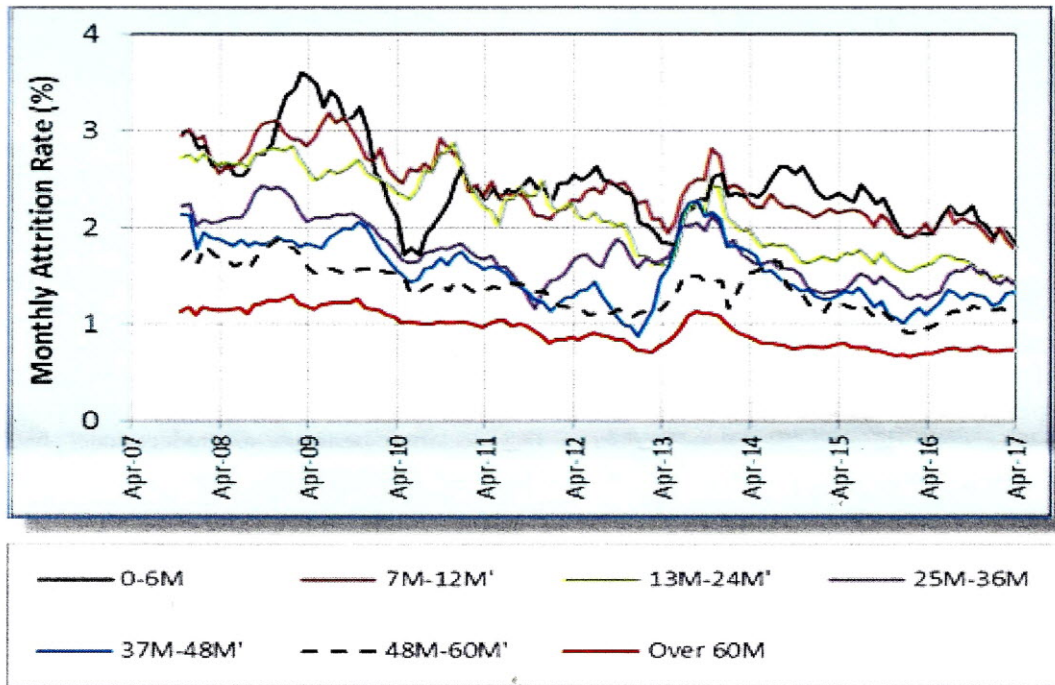
- 0 – 6 months
- 7 – 12 months
- 13 – 24 months
- 25 – 36 months
- 37 – 48 months
- 49 – 60 Months
- Over 60 months

Adjustments for Small Account Counts. Some products have a relatively small number of accounts in their defined categories. In such cases, we have found that aggregating the analysis over multiple products (e.g., business savings and money market accounts) reduces statistical noise and more stable results.

THE ATTRITION DASHBOARD

In Exhibit 3, we demonstrate sample results for personal checking accounts at a mid-size bank, followed by tables reporting various averages attrition rates. While confidentiality concerns prevent us from publishing the graphs for the bank’s multiple products, we can report that at multiple clients and multiple products, the results are remarkably stable: older accounts have consistently lower attrition rates and less volatility than the relatively newly opened accounts.

Exhibit 3. Attrition Dashboard for a Selected NMD Product



Note: The graphed lines are 6-month rolling month average attrition rates. The graph in Exhibit 3 can be supplemented by a table as shown in Table 1:

² Many deposit data files do not include closing dates and merely remove the account from the provided data.

³ Modelers should be careful to not count accounts that are “reassigned” as closed.

Table 1. Attrition Rates by Age Cohort

Age	Current	Average over the Past:				
		3 Mths	6 Mths	1 Yr	3 Yrs	5 Yrs
0-6M	1.60	1.98	1.92	2.03	2.19	2.21
7M-12M	1.46	1.82	1.86	1.98	2.05	2.17
13M-24M	1.26	1.42	1.46	1.56	1.63	1.76
25M-36M	1.51	1.44	1.47	1.50	1.43	1.57
37M-48M	1.51	1.37	1.31	1.28	1.26	1.40
49M-60M	0.83	1.00	1.11	1.10	1.15	1.20
Over 60M	0.69	0.70	0.72	0.73	0.73	0.80

Creation of an *Evergreen* Attrition Dashboard.

Once the model steps described above have been completed, *on-going monitoring* becomes relatively trivial. All future *updates* can be added to the graph by appending current counts to the two matrices for each product above and graphing at whatever reporting frequency is deemed appropriate by a bank's governance policies.

By regularly updating the graph and table, the bank has created in essence an *evergreen* dashboard. As more current data are added, the length of the time series displayed in the graphs only grows. No historical data needs to be retrieved. Old product codes can be disregarded because there only current product codes are in the update files. Adding to the matrices is a relatively simple exercise of the mapping accounts by age and closures by age from current data.

Benefits of an Attrition Dashboard. As stated at the beginning of the article, implementing the Attrition Dashboard will accomplish the following:

- The Attrition Dashboard eliminates entirely the need to hire consultants to provide calculations and reports on NMD deposit attrition. Also eliminated are the many (and substantial) indirect costs incurred when third party vendors are retained.
- The Attrition Dashboard provides a completely transparent and intuitive measure of the closure rate trends of accounts, by selected age cohorts. It also provides an empirical basis for making adjustment and *tweaks* to inputs into ALM systems when measuring EVE on a bank's non-maturity deposits. And in so doing, it alerts and provides decision support to management in the event of sudden or sustained change in account closure rates.

- The Attrition Dashboard generates a set of inputs that are directly transferrable to an ALM system. When combined with the age distribution of accounts the calculated attrition rates will accurately simulate the runoff of accounts over long periods.

CONCLUSION

Current practices in attrition simulation are unnecessarily expensive; they employ methodologies that are opaque and not well understood or managed by either users or risk managers. They yield less accurate measures of attrition than the alternative. Finally, current practices are typically delivered months or quarters after the data on which they are based are provided and do not allow the banks to engage in effective ongoing monitoring and response.

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What to Do Now to Prepare for CECL

Industry experts agree a significant amount of historical data is needed for financial institutions to prepare for CECL. As we get closer to the new standard becoming effective, have you started to prepare?