



*Jeff Judy &
Associates*



Finding the ALL/Capital “Sweet Spot” for Your Bank

*How a more reliable approach to
Credit Portfolio Assessment offers better
balance between protection and growth*

A White Paper from

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Executive Summary

Every bank has an *optimal* level of ALLL and Capital that balances the need to protect against future losses with the obligation to deploy shareholders' investment to grow the bank's business. Hitting that "sweet spot" can be very challenging, due to:

- ◆ Regulator pressure for *maximal*, rather than *optimal*, levels of ALLL/Capital, and
- ◆ Management's *lack of confidence* in forecasts of future losses and expected portfolio risk distributions.

A more reliable approach to *credit portfolio assessment* can be invaluable in managing ALLL and Capital to serve the shareholders and satisfy the regulators at the same time. In this white paper, we will review:

- ◆ The relationship between credit portfolio assessment tools and financial management of reserves and capital;
- ◆ The importance of not only getting the numbers right, but of convincing others that those numbers are valid;
- ◆ Features of the most beneficial models for performing credit portfolio assessment to gauge future losses;
- ◆ *Terminal Risk Analysis*, as an example of the next generation of risk migration analysis tools, providing insights into how these models work and what is required to implement them effectively;
- ◆ Recommended next steps for learning more about credit portfolio assessment tools and taking steps toward developing the types of portfolio information and forecasts that can enhance financial management of the bank.

The paper concludes with a summary of the long experience Jeff Judy & Associates brings to credit portfolio assessment, credit policy, processes and practices, and of the training and consulting services available to significantly impact what happens in the board room and on the front lines of your financial institution.

Capital ... reserves ... regulation ... closure ... survival! Anyone who has paid any attention to the media over the last few years, whether casually (your customers), or with interest (your investors), has learned to connect these words with the banking industry. All of them have recognized that the practice of "putting something aside for a rainy day" applies to banks as well as to individuals. They have also learned that:

- ◆ Many banks were careless about preparing for their rainy day, *and*
- ◆ When their rainy day arrived, it was a flood.

When "saving for a rainy day" doesn't get the job done

Many financial institutions that failed to protect their futures by laying aside sufficient resources to deal with losses are no longer with us, or now belong to some other bank. Meanwhile, the daily life of bank management has changed dramatically, in response to the enormously heightened attention regulators are paying to the "backstops" banks put in place to manage losses, both the inevitable losses that come even with prudent credit risk, and the unexpected losses, the ugly surprises, that can produce a crisis.

Regulators seem to favor locking up as much as possible in these "backstops," while bank management and their shareholders would dearly love to free some of those resources to build a stronger business, to grow. It all comes down to getting reserves and capital right, to finding the *optimal* amount to set aside for that rainy day.

Better forecasting of these "rainy day needs" is crucial to finding that optimal level, and the philosophy behind that forecasting is the focus of this white paper.

But first, let's back up and look at some typical patterns in recent years, starting with ALLL. After all, with the intense regulatory energy and media attention given to "capital adequacy," required percentages, and so on, we have become so inundated with discussions of capital that we may forget that capital is the resource of *last* resort, **not** the first line of defense.

ALLL: The First Line Of Defense

*We are all paying for
the sins of the past*

The Allowance for Loan/Lease Losses (ALLL) was supposed to be the first line of defense against losses. ALLL is there to give a bank a reserve that can be applied to "plug the dyke" when the financial statements spring a leak.

So let's face it: during the good times, many, perhaps most, banks took approaches to ALLL that left reserves *way too low* to keep up with losses, when they came. Had our industry paid more serious attention to ALLL when they *did* have the resources to put adequate reserves aside, fewer of them would have burned through ALLL, and then through capital as well, when the crunch came.

For the foreseeable future, regulators will closely scrutinize whether any given bank's combination of ALLL and capital is adequate to handle the possible losses they may face.

What Went Wrong?

The "whys" of inadequate ALLL levels are many, and they include excessive optimism about future financial results and over-eagerness to maximize profits and returns to shareholders.

At the same time, there were some institutions *with excellent intentions* that simply guessed wrong. And that's the heart of the problem:

*The best they could do, in managing reserves and capital,
was to make an "educated guess."*

*The right motives did
not save banks that
took the wrong
approach*

Now, managing ALLL and capital adequacy will *always* be something of an *art*. It depends on predictions about the future, assumptions about the economy and customers and marketplaces, and even the best of us can never precisely know the future.

No wonder so many institutions leaned too heavily on history, believing that the patterns of the previous years would continue indefinitely. Accurate financial forecasting of any kind is challenging, which is why even some of the best intentioned banks courted catastrophe by simply extending existing trend lines and

*Goal: less guesswork,
more reliability*

assuming those lines pointed to their future.

Fortunately, you really *can* put **more "educated"** and **less "guess"** into your thinking about ALLL and capital adequacy. With the right thinking, data, and technology, you can generate **more reliable estimates of losses**, and manage your reserves and capital more effectively.

How Does A More Reliable Approach To Forecasting Losses Benefit The Bank?

With a more systematic approach to *credit portfolio assessment* that incorporates your own experience, as well as factors from your immediate business environment, you can reap at least two significant benefits:

- ◆ Your bank manages ALLL and capital for the *optimum* combination of safety and availability of resources; and
- ◆ Your *justifications* for the reserves you maintain carry more weight with regulators, investors, and other interested parties.

Finding The "Sweet Spot"

Since capital is challenging to build and conserve in tough times, strengthening that first line of defense, ALLL, is a crucial step in protecting your bank's future. Managing ALLL is also central to maintaining as much control as possible over how you do business.

*More protection is not
always better. There's a
big difference between
the maximum and the
optimal level, for banks
and for people.*

After all, having been burned by the near-collapse of the financial services industry, our industry's regulators are looking for the *maximum* level of protection. But you, and your shareholders, are looking for the *optimal* level of protection, one that will meet any unforeseen challenges *without* exhausting the resources you need to maintain operations and generate income.

Consider your personal approach, as an individual, to saving for that "rainy day." To maximize your savings, you could go on a bread and water diet and dress in rags. That would give you a lot more savings and maximum protection against future financial

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crises. But it would not give you the life you want to lead. There is an *optimal* level of savings that meets both your life goals and your need to hedge your bets against unexpected developments.

ALLL and capital represent the **balancing point** between *excessive optimism* and *excessive caution*. More objective, more reliable, more data-based, and more precise forecasting of losses leads to more precise allotment of reserves. When you can be *confident* that your ALLL will meet expected losses, you do not have to "hedge your bets" by reserving more than is necessary. That leaves more resources to operate the kind of business your shareholders expect, one that generates earnings and builds capital.

The "Sweet Spot"!

Better forecasts, based on your own particular experience and data, give you the *best of both worlds*: reserves that are **not too low** to be *safe*, and **not too high** to be *productive*.

Persuading Others That You Are Right

Getting ALLL and capital right is not enough. You have to actively *persuade* others you are managing these tools well. *Strengthening your bank's "talking points" around ALLL/capital is a significant benefit of using a better model for forecasting losses.*

Unless you can convince other important players that you know what you are doing, you will never truly be in control of ALLL/capital at your bank

As noted earlier, regulators are extremely sensitive to risk and potential loss right now. They are likely to push you to reserve more than is truly needed. And no *subjective* argument is going to get their attention.

Clearly presenting the data, the trends, and the underlying reasoning of a good data-based model gives you leverage in your conversations with regulators. The objectivity and "testability" of the best models give you a better chance of getting regulators to accept ALLL and capital levels that they would not permit for banks who still rely on "educated guesses" to manage reserves.

On the opposite end of the spectrum, shareholders are looking for profits and dividends, especially if they had to forgo them during the worst of the economic downturn. They may wish that ALLL could be set *lower* as a way of boosting earnings.

Again, with clear data, the specific history of your portfolio, and a

good explanation of how your *credit portfolio assessment model* works, you can show your investors why the reserves you have put aside are truly necessary to protect the bank.

The best models not only point to the "sweet spot" between safety and operational resources for your bank, they help you convince others you have found that balance.

What Are The Features Of A More Reliable Approach To Managing ALLL/Capital?

What should you look for in the approach to credit portfolio assessment that you use to help you manage ALLL and capital levels at your bank?

Many models are available for identifying potential losses. The best models share these features.

- ◆ **Objective**, by which we mean "person independent." In other words, the predictions of the model will be the same, given the same data, regardless of who runs the analysis. It does not depend on the insights of a "guru" or the "gut feelings" of a highly experienced employee.
- ◆ **Outcome Based**, focusing on the eventual *financial outcome* of every loan, the point at which outstandings fall to zero, either through repayment or charge-off. *A risk rating is not, in itself, a financial outcome!* Since charge-offs are what you are defending against, any model that monitors only intermediate migrations in risk ratings without following the data to the eventual outcome is a compromise at best.
- ◆ **Forward Looking**, focusing on ALLL and capital adequacy sufficient to handle *future difficulties*. Although the model is developed from historical data, the focus is on future outcomes, and the *appropriate parameters and assumptions* about the future must be part of the management process.
- ◆ **Based on Your Portfolio**, providing predictions tailored to *your own institution's experience in your own marketplace*.
- ◆ **Capable of Segmented Analysis** based on, say, credit types (CRE, consumer installment, etc.), locations, risk ratings, and similar factors. A good model will give you the flexibility to

determine the most important predictive factors, and also to run the model against the markets and locations that define your bank.

- ◆ **Generates Evidence-Based Forecasts of Expected Losses.** Past levels of losses are not much more than a "seat of the pants" guide to future losses. An effective model for managing ALLL and capital predicts losses that can be expected at a portfolio level even when you cannot identify which specific transactions will contribute to those losses.
- ◆ **Allows Estimation of Unexpected Losses.** The best models minimize the guesswork in maintaining adequate capital to handle unexpected losses.
- ◆ **Can Be Tested,** meaning that the projections the model generates are measurable and objective, and can be compared to the actual results achieved, period by period.

*Let's look at an
example of a credit
portfolio assessment
model*

It may be helpful to take a closer look at an **example** of an effective credit portfolio assessment model that meets that above criteria. This model, which we highly recommend, is called, "**Terminal Risk Analysis.**"

What Is "Terminal Risk Analysis"?

*Terminal Risk Analysis
is the next generation
of "migration analysis".*

Terminal Risk Analysis applies sophisticated algorithms to a series of historical portfolio "snapshots" to paint a 'future snapshot' of the portfolio and the outcomes of the credits it contains. (If the fine points of this approach are important to you, contact me to request my associate Bill Stansifer's additional white paper that walks through this model in detail.)

You probably have heard the general term "migration analysis" to describe the tracking and projection of risk distribution. "Migration" simply refers to movement, the actuarial tendency of a certain portion of any given risk category to *improve, remain stable, or decline* in the next reporting period.

Certainly, many migration analysis models reveal information about how the distribution of credits among risk ratings changes

*Focus on future
financial outcomes of
individual credit
decisions*

over time. At the same time, many commonly used migration analysis provide largely "after the fact" analysis of what happened, and treat a change of risk rating as the primary "outcome."

Terminal Risk Analysis is distinguished by its focus on the terminal states of all credits, their repayment or charge-off. Those terminal outcomes generate the ultimate financial impact that drives decisions about allocation of resources to protect against losses. As a result, *Terminal Risk Analysis* not only helps you understand how risk profiles of credits are likely to be distributed in the next reporting period, but how the repayment vs. charge-off distribution is going to look in that period.

Compared to earlier models of "migration analysis," *Terminal Risk Analysis* is generally more forward-looking, more focused on forecasting terminal outcomes (repayments and charge-offs) of all the credits in the portfolio, and more adaptable in terms of the ability to explicitly manage assumptions and "what-if" thinking. *Terminal Risk Analysis* can even be used for **stress testing**.

And because *Terminal Risk Analysis* is driven by your own data, using information specific to your bank rather than industry estimates or peer group averages, management of ALLL and capital can reflect *your* unique organization, *your* strategies, *your* customers and *your* markets.

How Does Terminal Risk Analysis Work?

Conceptually, *Terminal Risk Analysis* involves the following steps:

1. The bank assembles data needed to support the analysis. These data must include:
 - a) information about each *individual credit in the portfolio*, including, at a minimum, outstandings and risk rating. Additional information about locations, loan officers, departments, or market segments may also be of value.
 - b) a long enough history to track outcomes (repayment, charge-off) for a significant portion of the portfolio.

*Terminal Risk Analysis
tracks individual
transactions, not
aggregate numbers*

Data ⇒

Historical Patterns⇒

Forecasts⇒

Management

2. The model takes a series of overlapping "snapshots" or "time slices" at regular points in the history as input, tracking individual credits, not just aggregate numbers.
3. The analysis identifies patterns over time, especially in regard to risk ratings and outcomes. If additional data, such as location, is available, the analysis can also detect patterns associated with those factors.
4. Terminal risk analysis applies the patterns that have been identified to forecast future distributions, what the portfolio will look like at a coming point in time.
5. The predicted state of the portfolio is used by bank management to set appropriate reserves and assess capital adequacy, in the context, naturally, of market, economic, and other factors.

While the process is relatively straightforward in concept, it is challenging in execution. The *primary requirements* are:

- ◆ **detailed, and consistent, portfolio data** from several periods;
- ◆ **proven mathematical models** that can draw accurate terminal outcome projections from historical patterns; and
- ◆ **dedicated software**, whether in-house or obtained from external resources, to apply the models to the data.

*Additional, more
technical, white paper
available*

If you would like to understand the methodology of Terminal Risk Analysis in more detail, I am happy to share a clear, but more technical, explanation written by my associate Bill Stansifer, who has decades of experience in developing these models. Simply contact me for Bill's white paper, "*Terminal Risk Analysis*."

What Key Elements Are Needed To Apply Terminal Risk Analysis?

The two key elements needed to benefit from Terminal Risk Analysis for better management of ALLL and capital are:

1. **Data**: generally gathered through internal resources;

2. **Mathematical models/Algorithms:** more frequently obtained from external resources.

Data Collection Is Crucial!

The quality of the data sets the limits for the quality and usefulness of the analysis

Whether you comb the data from your historical records or start growing your database now, in order to provide a reliable basis for forecasting future portfolio outcomes, the data must be:

- ◆ **Individual:** all of the desired information must be available on an individual loan basis.
- ◆ **Complete:** gaps in the data reduce the reliability of analysis.
- ◆ **Consistent:** for instance, a given risk rating has to mean the same thing for every period, and every location.
- ◆ **Appropriate:** if breakdowns by location or department or loan officer are desired, that data must be available for each individual transaction.
- ◆ **Sufficient:** a body of data covering several time periods is needed to identify reliable patterns in the data. You need a long enough record so that a portion of the individual credits reach their repayment/charge off outcomes. A good starting point might be monthly "snapshots" for at least a year, and two or more years will greatly improve the accuracy of the forecasts.

Start Now!

Do not put off data collection until everything else about the analysis model is figured out

You do not have to wait for the computing side of *Terminal Risk Analysis* – for software selection, say – to begin collecting data.

One blessing of the *Terminal Risk Analysis* approach is that each "snapshot" is complete in itself, dealing with whatever the current status of each loan may be. In other words, we do not have to know anything about the original loan amount, when the loan was booked, or, in fact, anything at all about the previous period.

Each "snapshot" or "time slice" of the portfolio is, in terms of the data we input, independent of every other one. When you choose to start with a particular month of a certain year, some loans will have just been booked, some will be halfway through their lifespan, and some will be approaching their final reduction

Quality data collection for meaningful analysis is simple in conception, but challenging in execution

through repayment or charge-off. But as long as we have outstandings, risk ratings, and any other factors you choose to incorporate in the analysis, we can start anywhere.

It takes time to assemble all that data, so consider getting a head start while other details of the analysis (e.g., software, consulting) are still being worked out. You mainly have to decide:

- ◆ what **additional information** you want to use to compare subsets of the data, e.g., loan officer, region or branch, department, and so on.
- ◆ whether you can pull together sufficiently detailed and complete **historical data** to input into the model. Many banks should be able to construct a historical database that will work.
- ◆ what **systems and procedures** you will put in place to ensure that the needed data are gathered, assembled efficiently, and entered into the model, in a timely fashion, going forward. While your *initial* efforts to assemble the needed data may be significant, you can ensure that *subsequent* data management is more efficient.

Again, data collection can be underway while paths to selecting and applying the needed mathematical models are being explored.

Mathematical Models

Terminal Risk Analysis depends on sophisticated mathematical models. Generally, *dedicated analysis software* provides the algorithms needed to generate accurate forecasts of portfolio behavior and transaction outcomes from the collected data.

The complexity of models like Terminal Risk Analysis often means that some outside help will be needed

Many institutions rely on outside consulting to help them with *Terminal Risk Analysis*, but some larger institutions may have sufficient internal expertise and resources to get the job done.

Wherever they come from, *Terminal Risk Analysis* experts can:

- ◆ **Educate** bank staff in key concepts necessary to ensure quality data collection and identify desired breakdowns.
- ◆ **Guide** the bank in designing its "data warehouse" with an eye to efficient collection, thoroughness, and suitability for analysis.

- ◆ **Design** a unique in-house analysis system for performing *Terminal Risk Analysis*, or
- ◆ **Provide** software tools to perform the analysis, and to customize the model as desired.

What Next?

Commitment to a better approach is the first step

I am happy to consult with you to explore concepts and practical steps toward using better data and better analysis to help you allocate reserves and capital to meet your unique needs. Some first steps I would recommend would be:

- ◆ **Decide** whether you have found the "ALLL/Capital Sweet Spot" for your bank, or whether you want to consider tools that could improve your allocation of these resources.
- ◆ **Learn** more about models like *Terminal Risk Analysis*: how they work, what it takes to implement them, how they can be used to improve your financial management of the bank and your relationships with regulators and shareholders alike.
- ◆ **Start data collection**, as mentioned above. Exploring your own data will help you develop consistent collection techniques, ensure consistency and quality, and speed up the adoption of any credit portfolio assessment tool you may adopt.

How Jeff Judy & Associates Helps

Learn more about how Terminal Risk Analysis works, and how it can help your bank find the ALLL/Capital "Sweet Spot"

Our team begins with **education**, helping bank management understand the benefits of enhanced ALLL/Capital management, and the role that more reliable portfolio trend analysis can play in that financial management. We also provide **consulting** expertise in collecting and preparing data, and in developing or obtaining software tools to apply *Terminal Risk Analysis*.

You might like to consider:

- ◆ **Scheduling a presentation** – live or via webinar –with Jeff Judy or one of his associates to explain the core concepts, methods, and benefits of *Terminal Risk Analysis* to your management team, *and to the technical staff* who will assist in

gathering, manipulating, and analyzing the portfolio data.

- ◆ **Requesting our additional white paper**, "Terminal Risk Analysis" that provides a more technical examination of this approach. "Terminal Risk Analysis" walks through the analysis process with examples and a much greater level of detail about using this model for *credit portfolio assessment* and for *stress testing*..
- ◆ **Scheduling a consultation** to look at your individual data set, your analysis goals, and your options for implementing *Terminal Risk Analysis* at your bank.

About Jeff Judy & Associates

When it comes to *credit portfolio assessment*, Jeff Judy & Associates brings the team approach you need to adopt sophisticated technical solutions, establish effective practices and procedures, and reinforce a culture that balances protection against future losses with opportunities for current growth.

As outlined above, the challenge of finding the ALLL/Capital "Sweet Spot" is both *cultural* and *technical*. Your bank needs access to the best algorithms and software to produce the most meaningful portfolio forecasts. But you also need to establish data management practices to ensure reliable forecasting, and that often means reviewing, say, risk rating practices closer to the front lines of the credit operation.

We offer the highest level of technical know-how combined with powerfully effective training support. In practice, Jeff Judy helps spread the understanding of the financial management goals and supporting practices across the relevant staff, while Bill Stansifer creates and adapts the algorithms and provides crucial guidance in collecting and standardizing data for meaningful analysis.

Jeffrey E. Judy, Principal

Over the past several decades, Jeff Judy's training and consulting activities have taken him all across North America, as well as to Europe and Asia. With bank management, Jeff consults on developing effective policy, portfolio management, and corporate culture issues. He has trained thousands of bankers and financial services staff in financial and credit analysis, risk management, building relationships, working with regulations, and implementing effective processes. Jeff's proven effectiveness in the classroom and in the boardroom ensures that strategies adopted by bank leadership are reflected in the daily practices on the front lines.

William E. Stansifer, Associate

Bill Stansifer has been a pioneer in the development of risk rating migration analysis, as well as in the application of those analyses to reserving practices. Bill's extensive experience in credit, both in staff positions and as a consultant, has given him command of both the big picture and the crucial details of credit. Before devoting himself to consulting full time, Bill worked as The Credit Policy Officer for the Community Banking Group at Norwest and as Chief Credit Officer for FirstMerit Corporation, a \$10 billion regional holding company based in Akron, Ohio.