



# Banking Wisdom from Risk Doctors & Casinos: Properly Quantifying Risks & Opportunities

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## **Unemotional Facts:**

“Time for the annual physical...right this way” said Larry the comedic loan officer to the stoic bank examiner. I silently observed as the examiner entered Larry’s office to discuss his largest problem loan.

“Great woman, Mrs. Smith...real tragic luck though...” And with that Larry proceeded to stir my emotions with a tale of woe not heard since Voltaire’s Candide. The examiner was unmoved by the powerful story surrounding the Smith line. Following more stoicism in reaction to Mrs. Smith’s terminal illness and her good work helping orphans, Larry commented “this isn’t impacting you at all...don’t you have any emotions?”

“I don’t permit emotion, either positive or negative, to impact my view of a credit,” the examiner replied and then proceeded to ask about the Smith line’s debt service coverage ratio and loan to value ratio.

“Amen, want a job as my credit reviewer?” quipped Larry.

## **Casinos Win: Community Bank Problems with Under-Quantification of Risk**

While understandably dismissed as a joking job offer at the time, Larry truly understood the importance of properly quantifying credit risk. As a successful community banker, Larry was aware of the impact that under-quantification of credit risk could have when the economic environment moved against him, as it had in a prior cycle. He certainly continued to consider the character of borrowers he knew personally; however, Larry realized that properly quantifying credit risk was becoming increasingly important as the commoditization of bank lending products grew. As the next in line to be bank President (according to the Board's succession planning), Larry really needed somebody to more systematically quantify the risk in his bank generally, let alone the credit risk in the loans he originated. Larry also needed a vacation.

On a well-deserved vacation to Las Vegas, Larry sat down at a blackjack table. After enjoying some entertainment and departing with the amount he was willing to lose, Larry thought about the basic math used by casino operators to so predictably separate those who enter the casino from the cash with which they arrived.

He reflected that casino operators are experts in statistical probability and basic expected value math. By knowing expected value math well, they ensure that if a player plays long enough, they will trend toward a long-term expected value consistent with the house winning a predictable margin.

What if community banking math was moving in a similar direction? Could more sophisticated banks that properly calculate the expected value of banking products predictably beat those who under-quantify risk in the long-term?

Larry had concerns. He remembered an earlier day when residential mortgages were individually underwritten before they became today's commoditized products universally underwritten to secondary market standards. Even the pricing on his better commercial loans seemed to be trending toward commodity pricing with lighter and lighter covenants. Larry decided to check in with his childhood friend, Jason, who now worked at one of the largest U.S. banks.

### **Communication Loses: Large Bank Problems with Over-Quantification**

Jason quickly confirmed Larry's concerns, "Yes, our credit underwriting process has become extremely quantitative...and I'd be concerned about competing long-term without solid risk and opportunity quantification."

Larry joked, "Didn't you guys need to get bailed out despite the higher math employed at your institution?"

"Fair enough," replied Jason, "we definitely overestimated the diversification benefit across many of our activities and we greatly underestimated correlations between different asset classes in times of stress. Nevertheless, I do believe that we have learned from the 2008 Great Recession. My bigger concern is more around effective communication of quantitative information rather than a decision to abandon quantitative approaches."

"Yeah," said Larry, "when I'm thinking of risk quantification at large banks I imagine the formulas on the chalkboard of *Good Will Hunting* or the equations of Professor Nash in *A Beautiful Mind*. Even if you've got quants with the ability, how do executives properly use this for decision-making?"

Jason agreed, "You've directly hit upon the biggest challenge facing our institution. We are still struggling with the optimal level of quantification for executive communication so they can take informed action. In the end, there will definitely need to be balance."

### **Need for Balance: Productive Quantification and Effective Communication**

While easy to exaggerate and contrast the under-quantification of risk at community banks with the over-quantification of risk at the largest banks, in truth there is often a similar internal dynamic that plays out at most banking institutions regardless of size. Often there is a quantitative camp competing with a more qualitative ("expert judgment") camp.

Increasingly, bankers in all camps agree that some risk quantification is required for most effective decision-making. Regulators are pushing those in the more qualitative camp with

guidance on the value of stress testing, which slowly (and predictably) has migrated down from the largest financial institutions to the doorstep of the smallest community banks.

As important as any particular quantitative method is the ability of quantitative staff (internal or external) to effectively communicate with experienced banking executives. The second paragraph in this article made a somewhat obscure reference to a book written in 1759 by Voltaire. If fewer than 20% of our readers follow the reference, this can aptly be described as “ineffective communication.” Similarly, when quantitative staff assumes executive knowledge of “Bayesian statistics” or “an orthogonal attribute in a principle component analysis,” they are often not communicating effectively. As important, executives should let quantitative staff know when certain quantification techniques confuse them, and collaborate to find appropriate levels of quantification.

Finding the right level of quantification, while simultaneously permitting effective communication (of risk and opportunities), is important. Nevertheless, most executives know that to blindly follow detached quantitative risk leads to peril. There is always the non-trivial chance that quantitative estimates are wrong. In response, sensitivity testing has emerged in practice (reinforced by regulatory guidance) to show the impact of a quantitative modeling assumption error.

At DCG, we help institutions (and bankers like Larry) find the right amount of quantification for optimal executive decision-making. For deposit studies, this will involve at least some basic statistical regression. For strategic planning and capital planning, we often help bank executives find appropriate levels of (risk and opportunity) quantification. Even for executives at smaller community banks, we help simplify economic scenarios (such as those outlined by the Fed for larger banks) into useful information for effective decision-making.

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As a Managing Director at Darling Consulting Group (DCG), Drew brings two decades of experience evaluating asset liability management and assessing bank credit risk. His unique combination of regulatory and private sector experience provides modeling insights to improve strategic decisions.

As a consultant, Drew's experience spans the spectrum from top Fortune 500 firms to very small firms. His advisory skills were procured to lead an asset liability management review for a global systemically important financial institution (GSIFI) and he consistently develops systems to help internal teams solve complex business problems at entities of all sizes.

During his extensive FDIC career, Drew's asset liability management and credit knowledge was drawn upon to develop regulatory training materials used by multiple agencies, and he was a key contributor to 2007 "war game" simulations, creating scenarios similar to events that actually unfolded in late 2008.

On a personal note, Drew enjoys martial arts and playing soccer with his two boys, Dean and Luke, and spending time and traveling with his wife, Tammy. Drew is a Boston College graduate who has a passion for learning and has remained an active CFA Institute volunteer for over 16 years.

*This article first appeared on the GFMI E-News website.*

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