

Advanced bankers are taking a much more comprehensive view of asset diversification, with emphasis on pragmatic insights that can be harnessed to support healthy growth.

The Portfolio Approach to Asset Allocation

BY ANNETTA CORTEZ AND WEI KE, PhD

As banks move beyond the worst of the recent U.S. financial crisis, management teams are turning more attention to the question of loan growth. And, true to form, most are largely relying on goals and measurements pertaining to individual lending categories, everything from commercial realty to retail credit cards.

The problem, however, is that critical portfolio performance issues can be overlooked in the drive to max out each discrete line of business. Too little consideration is given to the sympathetic risk exposure of various lending categories, and often there are pronounced skews in the risk/return profile of various asset categories.

In such circumstances, there is a heightened risk that executive management will wind up dissatisfied with the collective performance of the

lending units. Business line decisions based on margin and volume often compromise the overall loan portfolio, in terms of diversification and risk-adjusted returns. And this flaw typically worsens over the lending cycle as fast-growing asset categories overtake the portfolio mix.

Coming out of the biggest financial crisis since the Great Depression, banks have every reason to strengthen the framework for asset allocation, a critical exercise in shaping the market outreach and overall risk posture. Indeed, the weaknesses of conventional tools and approaches were clearly exposed during the crisis:

- ❖ In many cases, budgets and loan growth objectives were set without examining the overall portfolio implications.

- ❖ Institutions often under-priced for risk, which had the effect of exaggerating growth in higher-risk loan categories and among less creditworthy borrowers.

- ❖ Risk models were based on a limited range of recent results achieved in a period of strong economic growth, without appropriately reflecting the implications of prior or potential future down periods, contributing to a false sense of security during the years of rapid expansion.

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- ❖ Potential high-stress market scenarios were rarely considered, and even when they were, institutions typically did not consider how risk correlations can morph in a crisis (i.e., the risk covariance between home equity and credit card lending leaps from, say, 30% in steady-state conditions to 70% in a market collapse).

- ❖ Decisions and results were not evaluated within the larger context of peer group performance. In some cases, it takes only a glance to see that a bank's risk-adjusted performance is out of line with optimum results seen elsewhere in the industry.

Given the grievous consequences of these practices during the recent downturn, it is clear that asset allocation matters, and is not a simple exercise where the business activity with the highest current returns gets the most available balance sheet space. In particular, executive management needs a systematic way to rise above the political and financial dynamics of the various business lines, and continuously evaluate and refine risk-adjusted performance across the institution.

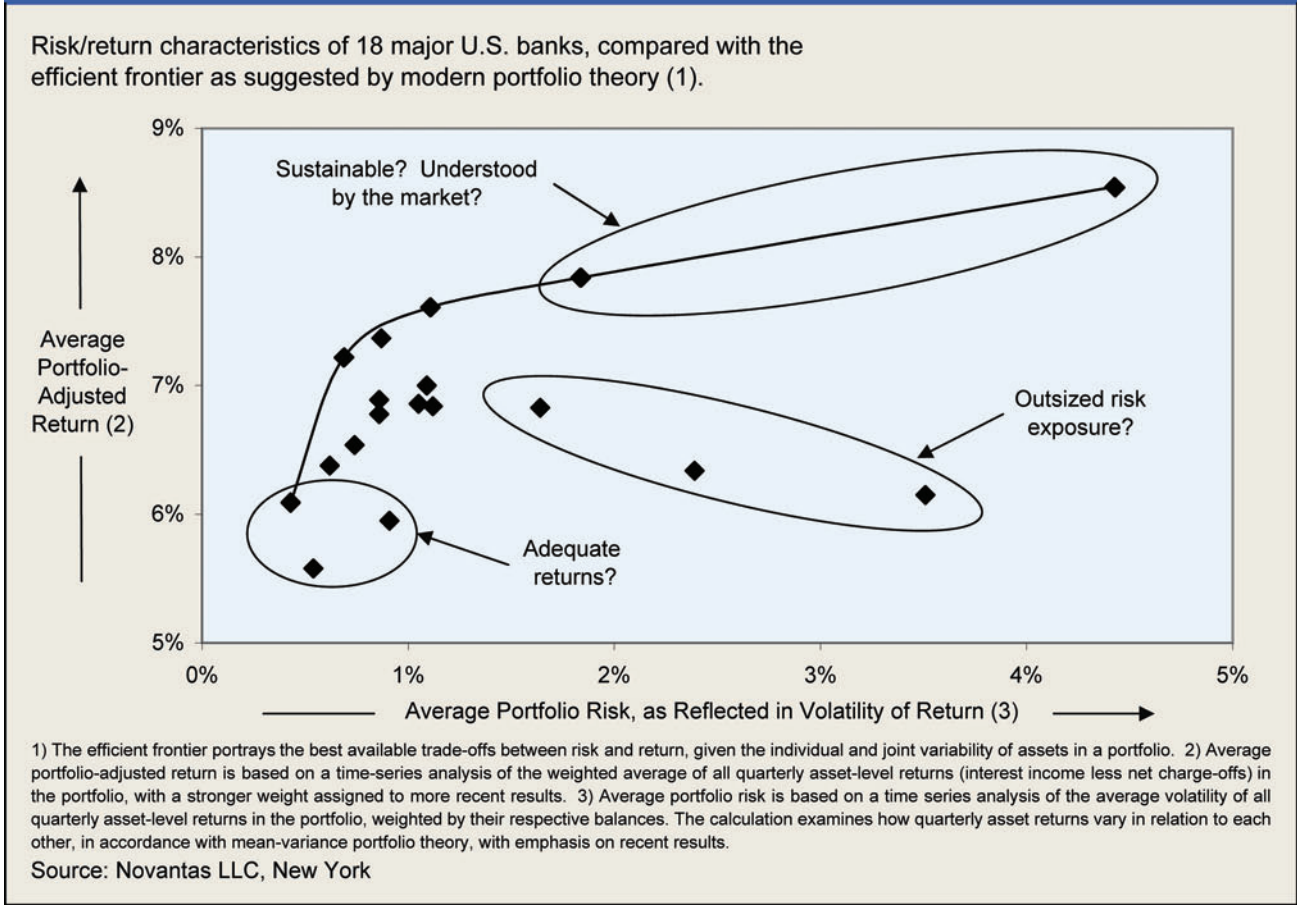
CLEAR GUIDANCE

In the realm of risk-adjusted performance, there is a widely-held belief that it is simply impossible to detect potential issues in the midst of a market expansion. Only when a slowdown hits, the theory goes, can management truly pinpoint the weaknesses in its growth strategy. And of course by then it is too late.

We disagree with that assertion. Going back to mid-2007 for example, when the Dow Jones Industrial Average was still ranging well above 13,000, a variety of banking performance issues were evident – not having to do with mortgage securitization – based on data that was publicly available at the time.

One visible issue prior to the market downturn was a skew in composite performance. By plotting observed variations in risk/reward along a continuum, it is possible to construct an “efficient frontier” of risk-adjusted returns, providing a benchmark by which individual results can be evaluated. Exhibit 1, for example, shows how the retail loan portfolios of 17 major U.S. banking

Exhibit 1: Comparison of Major U.S. Bank Retail Loan Portfolios, Midyear 2007



companies stacked up in mid-2007 (we believe that roughly similar patterns would have been evident in mid- to late 2006 as well, based on data available at that time).

Three major types of issues spring from this type of analysis:

❖ *Adequacy of returns.* In some cases, institutions were underwriting solidly overall, but realizing only minimal comparative yields. This has a number of implications, including a slim margin cushion in the event of market turbulence and probable misallocations of capital into business lines where margin was sacrificed for growth.

❖ *Outsized risk exposure.* Among other institutions, portfolios were exhibiting outsized volatility in the face of average to below-average returns. One of the institutions in this group later succumbed to a federally assisted merger; another has yet to emerge from an extraordinarily long and deep trough in performance and trading value.

❖ *Sustainability of returns.* At least through mid-year 2007, some institutions appeared to be successful stretching out along the risk continuum to capture superior returns. But banking history is loaded with examples of high-flying portfolios and institutions that subsequently lost altitude, many quite suddenly. It is well worthwhile to verify the foundations of current success. What sectors of the portfolio are driving this performance? Is there a critical dependence on a few business lines? Do “strengths” rest on rapid growth in new areas? Even if a deeper look is reassuring, does the market understand the sustainable foundations of the high-risk portfolio?

To test whether this type of analysis resonates with the investor view of the banking industry, we looked at how estimated retail portfolio returns for each bank varied from the optimum as suggested by the efficient frontier. Comparing the two-year change in this metric (2007 to 2009) with the two-year change in market trading value, we saw a 43% statistical correlation. That is a high figure in financial market statistics, where the investor frame of reference changes constantly in a sea of emerging information. It seems obvious that many investors, whether consciously or instinctively, are evaluating banks through a peer-based examination of risk-adjusted portfolio returns.

DEEP DIVE

As senior management becomes more sensitized to the risk/return profile of the institution, it has the

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opportunity to delve into the specific drivers of that profile, in terms of business line performance, setting the stage for course corrections.

Ultimately, each bank should systematically conduct a periodic two-fold evaluation of portfolio efficiency. This includes measuring the risk/return profile relative to peer institutions, and also looking at the internal consistency of the portfolio, as reflected in the degree to which various asset categories vary from the efficient frontier.

Simply looking at the degree to which the yield in various asset categories fell short of the optimum feasible level as indicated by volatility, for example, there were enormous differences among the banks in our performance study. Within a range that assigned a score of “0” to a statistically perfect score and a “10” to the widest possible variance from the efficient frontier, several banks had a composite variance score of less than 1 (weighted by asset concentration), while several others ranged from 6 all the way to 9. Also, extreme heterogeneity of volatility-adjusted asset category performance in mid-2007 was clearly associated with subsequent performance distress.

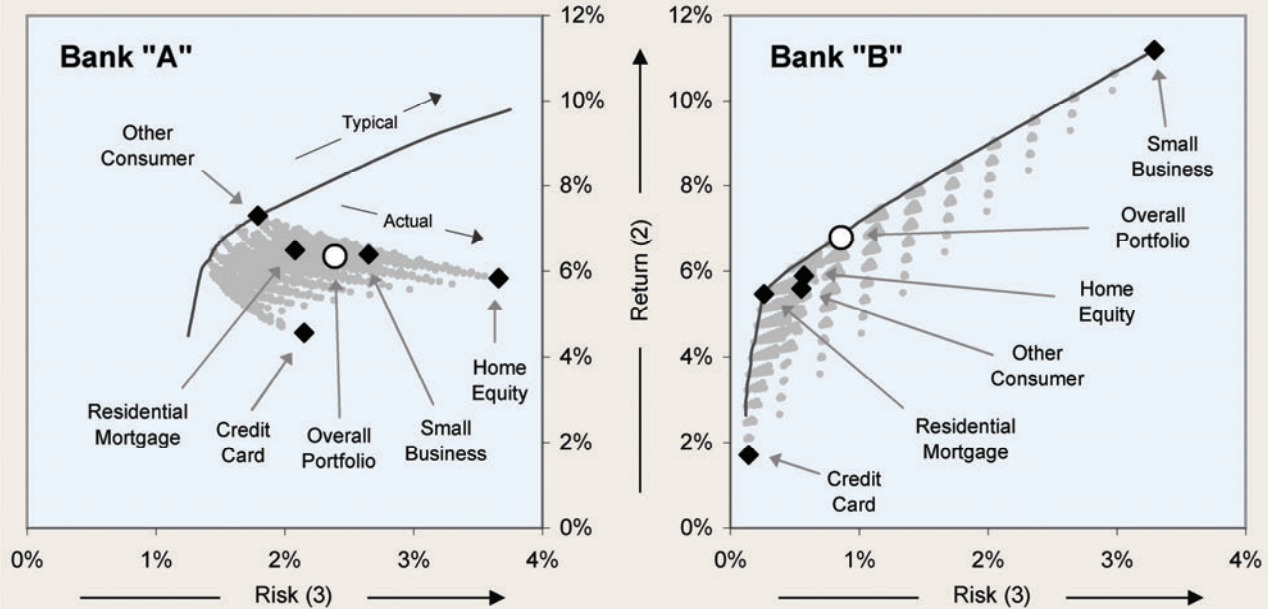
There are clear differences, for example, in the gravity and type of questions confronting Bank “A” versus Bank “B” (Exhibit 2). One case appears laced with distress; the other seems more a matter of paying attention to outliers. Both profiles are based on data that was publicly available in 2007.

Bank “A.” For starters, Bank A was taking far more risk to achieve comparable levels of return with Bank B. To achieve a roughly 6% return in home equity lending, for example, Bank A was incurring more than seven times the volatility in that line of business, compared with Bank B.

Then looking strictly inside the retail portfolio, there was an overall pattern of declining returns relative to risk – the opposite from the norm. In terms of risk/return performance consistency

Exhibit 2: Comparison of Two Regional U.S. Bank Retail Loan Portfolios, Midyear 2007

Risk/return characteristics of Bank "A" vs. Bank "B", compared with the efficient frontier as suggested by modern portfolio theory (1).



1) The efficient frontier portrays the best available trade-offs between risk and return, given the individual and joint variability of assets in a portfolio. 2) Average portfolio-adjusted return is based on a time-series analysis of the weighted average of all quarterly asset-level returns (interest income less net charge-offs) in the portfolio, with a stronger weight assigned to more recent results. 3) Average portfolio risk is based on a time series analysis of the average volatility of all quarterly asset-level returns in the portfolio, weighted by their respective balances. The calculation examines how quarterly asset returns vary in relation to each other, in accordance with mean-variance portfolio theory, with emphasis on recent results.

Source: Novantas LLC, New York

among asset categories, moreover, Bank A had a composite variance score of 9 (with 10 being the worst on a 10-point scale).

Faced with an overall underwriting challenge, Bank A should have been looking at asset concentrations; places where growth should be stopped; places where risk defenses should be strengthened; and places where pricing could be strengthened. Specifically, Bank A had one of the highest portfolio concentrations of home equity loans (22%) among the study group, with the highest comparative volatility in this asset category and the next-to-lowest yield. It was also overweighted in residential mortgage loans (61%), with above-average volatility and below-average yield.

Bank "B." While Bank B could take comfort in an overall cohesive risk/return profile (a phenomenally low composite variance score of 0.2, with 0 being the best on a 10-point scale), it still had extreme results in certain asset categories, warranting executive management attention. In particular, the credit card portfolio, while extraordinarily stable, seemed to be going nowhere in generating returns.

Meanwhile, the small business portfolio was operating way out on the risk spectrum, raising questions about sustainability of current results; whether to continue expanding in that area; and ultimately the outlook for borrowers in that market sector. At mid-year 2007, in fact, Bank B had the highest retail portfolio concentration of small business loans (22%), compared with a simple average of 15% within the study group.

While these two examples were selected to provide a sharp contrast, the fact is that each of the 17 banks in the study had at least a few yellow flags in mid-2007, and many had multiple red flags. And within individual loan categories, outliers in the risk/return continuum often were accompanied by exaggerated portfolio concentrations. Such scenarios were correlated with the largest subsequent declines in trading value.

DECISION CONTEXT

Some executives take the fatalistic stance that portfolios take on something akin to unalterable momentum, so why go looking for problems that can't be addressed sufficiently in advance, or to a

sufficient degree, to make a real difference. Others are resolute in saying that certain lending activities are non-negotiable, essential to the full service of customer needs and upholding the brand promise.

Perhaps not surprisingly, however, such comments typically emanate from bankers who are unfamiliar with the portfolio approach to asset allocation. Across the industry, in fact, it is safe to say that most major banks are neither active nor even conversant on this topic. Insurance companies have done a far better job of capitalizing on this approach. In banking, by contrast, the best that typically is seen is that business lines are managed with a heightened sensitivity to risk-adjusted returns, certainly a big step in the right direction, but still falling short of true portfolio optimization.

To move down this path, banking executives will want to see specific pragmatic applications. Looking ahead, there are three major areas where asset allocation methodologies can be used to improve critical executive management decisions:

Risk/Reward Equation. One application is analytically identifying ways to improve the risk/reward equation by adjusting the aspects and proportions of various risk/return elements, e.g., product categories, geographies and credit tiers.

For example, one bank found a way to improve overall-risk adjusted returns by making judicious changes in its business line growth priorities over the next two to three years. This will be done by easing back on certain business lines with high correlation in volatility (greater than 90%), and energizing other lending categories that can uphold returns while providing greater risk diversification (correlation of 40% to 70%).

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Diagnostics. Another application is pinpointing asset categories in need of extra management attention, either to improve risk-adjusted performance or to evaluate for divestiture or strategic expansion.

At one regional banking company, for example, results from a portfolio analysis provided additional support for a senior management decision to exit a major lending category. This was a case where exclusion provided a tangible lift to

risk-adjusted returns, plus management identified other lending categories that could be re-emphasized to uphold overall balance growth.

M&A Strategy. A third application lies with mergers and acquisitions. Hypothetical combined portfolios be evaluated on the basis of the interrelated performance characteristics of major asset categories, and the institution also can evaluate the tradeoffs between emphasizing core internal growth or external combinations.

In one case, an institution discovered that it already was approaching a “sweet spot” in terms of optimal asset diversification and risk-adjusted returns, implying that if it wanted to reach the next level of growth, it probably would need to look outside of the company for potential acquisitions.

Such pragmatic techniques help the bank to stay focused on the big picture of robust portfolio diversification and risk-adjusted performance, as opposed to a diffused effort that mostly concentrates on individual trees in the forest.

CORE PRINCIPLES

For successful practitioners, active portfolio management is a way of life. On an ongoing basis, senior management needs to be able to evaluate not only individual business lines but also how the mix characteristics of the loan portfolio affect overall risk-adjusted returns.

The goal is to develop an analytical context that will help to identify the optimal portfolio mix for any given level of risk; accurately assess the current position of the institution relative to the optimal; and identify specific asset allocation tradeoffs that the institution can use to improve overall performance. There are three core principles involved in translating these concepts into action:

- ❖ Asset allocation must be managed as a dynamic process, one that utilizes a portfolio view of diversification and that reflects ever-changing risks and returns in the markets within which the bank functions. It is not like an automatic thermostat that the user can “set and forget.”

- ❖ Corporate decision models must account for the ways that risk actually evolves. Specifically, this means that traditional economic capital models will need to be retooled to reflect the potential for rapidly changing risk correlations, both within various asset categories and among various business line portfolios, as well as the dramatic leaps in risk volatility that can occur in stressed market conditions. We believe that this

need alone will spawn a new generation of models that no longer are tied to the limits of smooth statistical functions.

❖ Risk must be measured as a series of interrelated functions, where changes in one risk silo, e.g., credit, has implications for how the risks in other silos, e.g., liquidity, are calibrated. Going forward, institutions must keep sight of this critical perspective throughout the business cycle, and not get lulled into the trap of fine-tuning scattered details in peak market conditions that may presage the next downturn.

MANAGEMENT IMPLICATIONS

Realistically, banking companies will need to make several major adjustments to embed these core principles into the organization.

One priority is revising executive management orientation and some of the usual steps in business line planning and performance evaluation. Often today, lending categories operate largely as entities unto themselves within major banks, resulting in a more splintered and tactical management planning process that mostly focuses on individual line of business performance year-to-year.

Certainly it is appropriate to set careful targets; identify how they will be achieved in terms of volume and margin; consider the capital that will be needed to support growth; and consider overall returns relative to risk. The trap, however, is not considering the conjoint risk of various business lines, and how diversification or lack thereof can impact performance over the full business cycle.

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Ultimately, the bank will be looking for a diversification-adjusted economic capital allocation. The contribution of each business unit will be evaluated not only by individual risk, but also by the degree to which it either strengthens or weakens

the overall profile of the portfolio, relative to the diversification-adjusted return on capital.

A second priority is to approach portfolio-style asset allocation with the full analytical rigor that it deserves. While admittedly easy to say in retrospect, conventional risk assumptions made at the top of the market proved naïve and only encouraged more counterproductive expansion, instead of functioning as a curb. In the aftermath, one of the larger priorities in bank risk management is to recalibrate risk metrics to better assess exposure over the full credit cycle, not just in comparison with recent results.

As first demonstrated by Professor Harry Markowitz of the University of Chicago, certain patterns emerge once a portfolio is arrayed by risk versus expected return, such that current and considered configurations can be compared with an “efficient frontier” that represents the best of what potentially can be accomplished at each level of risk. The catch, however, is that the quality of the underlying assumptions and inputs ultimately makes or breaks the value of this type of analysis.

In using quantitative decision models, the institution will not only need accurate retrospectives on risk, but also well-thought-out forecasts. In particular, risk measures must incorporate a full view of so-called “tail risk” (risk events with statistically remote probability but potential devastating impact) to provide the most value in helping to strike optimal tradeoffs in portfolio composition.

This requires a more in-depth exploration of potential catastrophic scenarios, which can be underplayed in traditional statistical models that tend to assign infinitesimal probabilities to such outcomes. One school of thought holds that tail risk marks the defining difference in performance for many portfolios over the life of the credit cycle; buried for years during benign conditions but then lethally evident in stress scenarios.

Realistically, executive management will need some semblance of a central analytical team that will be tasked with continuously updating the bank’s risk/return profile, with specific implications for lines of business. Analytical techniques need to be applied consistently, with tight limits on the kinds of special exceptions that individual business units may lobby for. Findings then need to be introduced into ongoing management activities, with clear backing from executive management.

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INFLECTION POINT

Unbelievable though it may seem, given the depth of the crisis that the banking industry has gone through, renewed growth is already a rising priority and will gain more momentum going into 2011.

Standing at the post-crisis ground floor, banks are reassessing strategies and portfolios, hoping to build a solid foundation for future expansion. If this is done only through a narrow examination of individual business lines, however, there is a distinct risk that new cracks and flaws will quickly creep into the foundation.

The institution’s aggregate risk exposure must be measured in a way that reflects the interrelated manner in which credit, market and operational risks surface in stress scenarios. Events can trigger a chain of increasingly severe aftershocks as one risk crosses into another. An example is when credit problems cause reputational concerns in the market, which then cause a liquidity squeeze.

Through the discerning use of new risk measurement tools that compensate for the weaknesses identified in the current crisis, prescient banks will be able to establish a much more robust context for key decisions about loan portfolio composition, and they will be much better able to monitor and anticipate risk-adjusted performance. We believe that this approach is destined to become a long-term senior management tool that will be used throughout the credit cycle.

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