Creating value in challenging times

Creating value in challenging times: an innovative approach to Basel III compliance

An Experian white paper

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Introduction

There is a broad consensus that the latest version of the minimum capital requirements regulation, Basel III, will have a major impact on the banking market, especially on average profitability.

Banks are reacting swiftly to these new regulations and already have begun considering ways they can offset the negative impact on their return on equity (ROE) and profitability. The main levers they can use to respond to Basel III include:

- Strategic and organizational changes, such as migrating from a more capital-intensive to a less capital-intensive business model or organization. Banks also are implementing leaner lending processes to cut operational costs and counteract negative impact on profit and loss (P and L)
- Balance sheet and asset liability management (ALM) initiatives to increase liquidity and decrease maturity transformation
- Consolidation of their credit risk governance infrastructure to boost the quality of their credit portfolios and reduce capital charges
- Modifying their portfolio composition by moving, for example, to more retail lending and less corporate lending to reduce capital charges
- Optimizing credit strategies (such as accept/reject, loan amount and pricing) to maximize the value of their lending portfolios

In this paper, we will provide a high-level introduction to Basel III regulation and discuss some of its impact on banks and the banking system. We also will present a real business case showing how organizations turn these regulatory challenges into business opportunities by optimizing their credit strategies.

Basel III: a regulatory tsunami

In the aftermath of the financial crisis of 2007 to 2010, there was general agreement that the global financial system needed reform. When the Basel Committee on Banking Supervision (BCBS) published its regulatory recommendations in 2009, the impact was felt far and wide. The Basel III framework has been called a "regulatory tsunami" by José Maria Roldan, Chairman of the Basel Committee Standards Implementation Group. Banks would be forced to change the way they had been doing business for decades, and the outlook was uncertain. They would not only have to have more capital on hand in the event of financial disruptions, but the composition of that capital also would have to be retooled to ensure resilience even under particularly adverse economic conditions.

More capital, better quality

The first area of focus in Basel III is requiring better quality capital. The area most impacted will be Tier 1 core capital, i.e., common equity. This type is the highest form of loss-absorbing capital.

To enhance the quality of capital, Basel III will provide for a stricter definition of core capital, setting criteria for accepting common equity and other limited qualifying financial instruments for regulatory capital purposes.

Core capital also will be provided a greater weight. Under the new definition, some types of assets will be deducted directly from common equity rather than Tier 1 or Tier 2 capital, as in the current framework. As a result, the weight of Tier 2 capital will be dramatically reduced.

To further enhance the quality of capital, Basel III also will provide for a much stricter regime of deductions. Essentially, risky assets such as reciprocal cross-holdings in the capital of banking, financial and insurance entities will be deducted from core capital.

As a consequence of this focus on improving the quality of capital, Basel III definitions will lead average international banks to dramatically lower Tier 1 and core capital ratios (which are currently set at 4 percent and 2 percent, respectively).

Increased capital requirements

Basel III also is expected to substantially increase capital requirements. The minimum requirement for common equity will be increased to 4.5 percent, and Basel also will provide for an additional capital conservation buffer set at 2.5 percent.

Another measure to provide additional funds to mitigate future periods of stress is a countercyclical buffer, which ranges from zero to 2.5 percent of risk-weighted assets. This buffer would build up during periods of aggregate growth to be used during downturns, when the countercyclical buffer would be released to ease the negative effect on economy of the growth of systemic risk.

Extremely large financial institutions will face even stricter capital requirements. For institutions that are found to be systematically important, national authorities will impose additional holding requirements of up to 3.5 percent.

Focus — Increased capital
Basel II vs. Basel III Minimum Capital Requirements

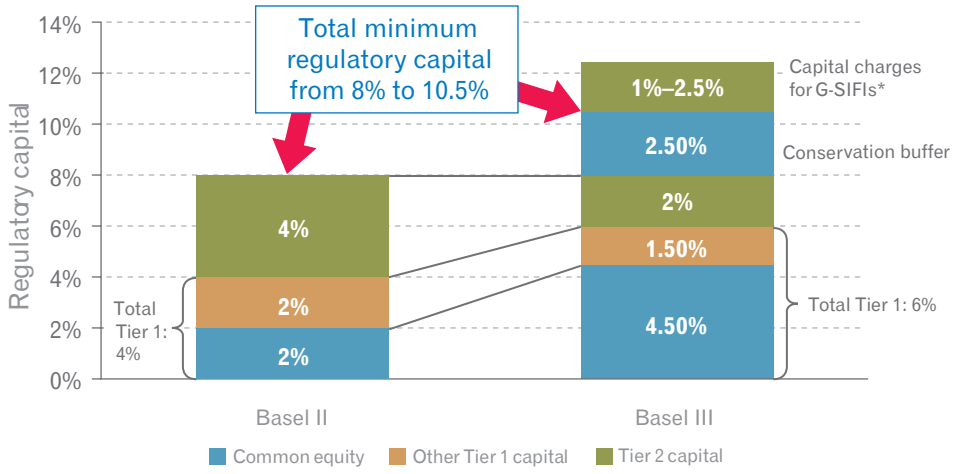


Figure 1: The cumulative impact of Basel III is expected to have a substantial impact on capital requirements.

Additional liquidity requirements
The third major aspect of the Basel III standard will focus on liquidity requirements. One of the primary causes of the financial crisis in 2007 to 2010 was a sudden lack of liquidity in the banking system. To address this issue, Basel III introduces two key minimum liquidity standards.

The liquidity coverage ratio (LCR) will be introduced in 2015 and is intended to promote short-term resilience to liquidity disruptions. A second standard, the net stable funding ratio (NSFR), is designed to address funding mismatches by incentivizing the use of stable sources of funds. This standard will be introduced in 2018.

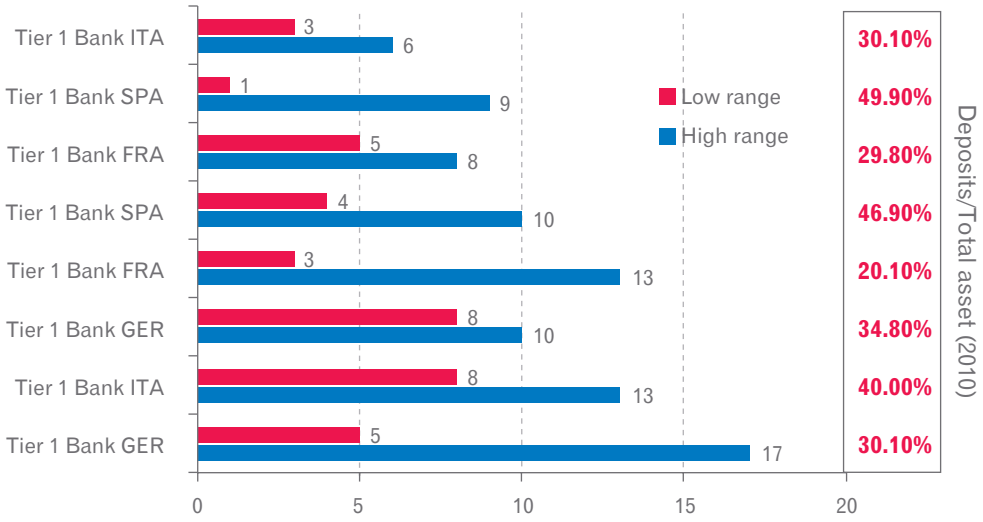
A major impact on profitability
Together, the flood of new regulations and stringent requirements specified by Basel III are expected to create major consequences and significant changes for banks. Analysts expect that new minimum capital requirements; revised capital compositions; and enhanced liquidity requirements will hamper profitability, return on equity (ROE), and growth.

- **Reduced profitability and ROE —** According to McKinsey & Company, U.S. financial institutions can be expected to suffer a loss of 3 percent ROE. Accenture plc. anticipates that European Union (EU) banks will suffer a loss of 5 percent ROE.
- **Impact on capital —** Basel III also will affect capital. For example, a recent Standard & Poor's survey of large global banks calculates a shortfall in capital of US$763 billion to meet minimum capital requirements. McKinsey estimates that U.S. banks will need to raise US$870 billion of additional Tier 1 capital, while the European sector will have to raise €1.1 trillion. The overall shortfall is expected to be approximately 60 percent of current U.S. and European Tier 1 capital.

- **Liquidity shortfall —** According to McKinsey, the new requirements will impose a massive impact on liquidity, creating a shortfall of approximately 50 percent of all outstanding short-term liquidity.
- **A drag on growth —** Although exact predictions of Basel III's impact on growth are difficult, studies by the Organization for Economic Co-operation and Development (OECD) predict that the new rules will reduce gross domestic product (GDP) growth from 0.05 to 0.15 percentage points per year.

Some more recent estimates from the market*

Estimated capital shortfalls for some of the main EU players (€, bn)



Source: Financial Times, based on a selection of recent analysts' notes

Figure 2: Estimated capital shortfalls for key EU players

How will banks react to Basel III?

Clearly, Basel III represents a seismic shift in financial regulations. According to industry experts, financial organizations are expected to react in several different ways to help mitigate the impact of the many new requirements they face.

According to industry analysts, many of their reactions will be strategic initiatives, involving migrating their organization's models to new business models that will be less affected by the new requirements and more profitable. For example, a retail banking group might decide to sell one if its non-core investment banking units to reduce capital charges.

Banks also could react to Basel III requirements through finance and ALM initiatives. For example, they could restructure balance sheets to reduce maturity transformation and enhance the liquidity of their assets.

Organizations also can consolidate and enhance their existing Basel II infrastructure, including models, tools and processes. This approach is important, because if capital requirements are escalating, even as the cost of capital increases, measuring and controlling risk will be key.

Banks also could choose to intervene by changing the structure of their portfolio composition to minimize the impact of the new requirements. For example, a bank might reduce its portfolio to increase retail lending and minimize corporate loans. Credit and sales strategies can be adjusted as well to reduce capital charges. An organization might adjust its product mix and pricing, terms and conditions to optimize risk-weighted assets (RWA) and capital usage.

All strategic initiatives aimed at offsetting the negative impact of the new Basel III regulations are generally known as "RWA optimization strategies." These can include disposal of assets such as selling non-core operations, divesting from specific businesses (e.g., investment banking), pulling out from one or more geographical markets, restructurings and other operational initiatives, and capital management programs.

Experian's approach to optimizing RWA

Many banks are employing a top-down approach to strategies that help offset the negative impact on profitability of the new regulatory environment. However, an alternative, bottom-up approach can be very effective at optimizing RWA. By focusing on improving and optimizing their credit strategies, banks can achieve significant benefits in terms of value creation — and create more value out of their existing portfolios.

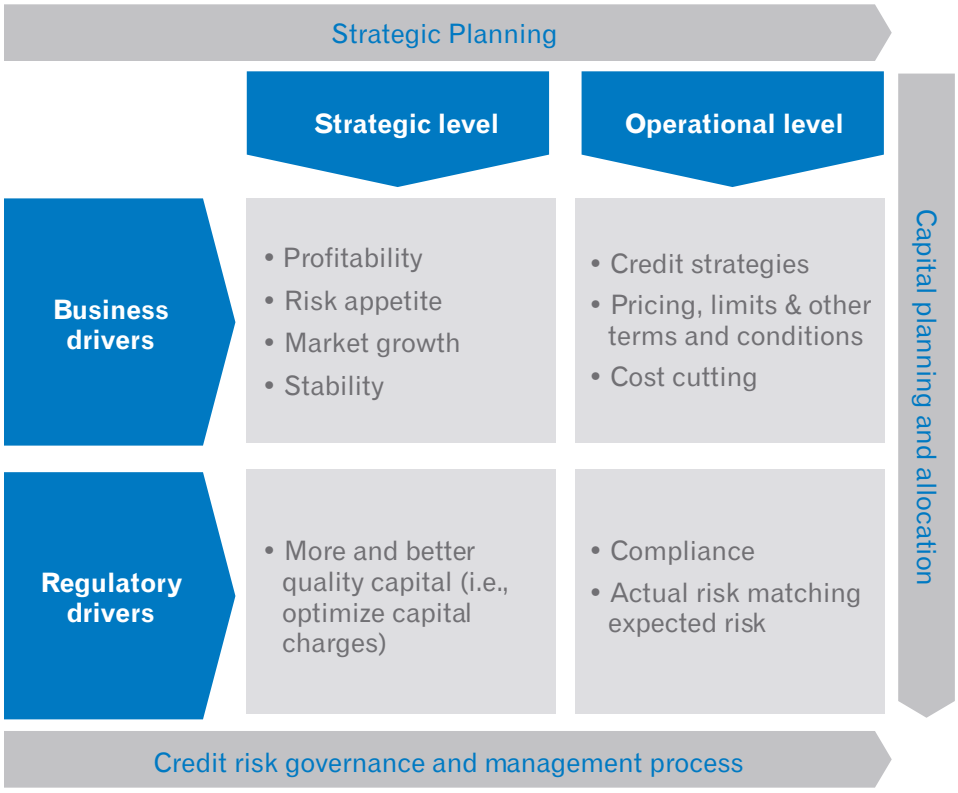


Figure 3: Financial organizations must balance a complex array of business and regulatory drivers at the strategic and operational levels.

Business and regulatory drivers are a fact of life for banks. They must balance business and regulations at both a strategic level and an operational level. At the strategic level, banks are driven by a need to maximize profitability and maintain their desired risk appetite. They want to keep and grow their market, and they require stability.

At the operational level, these business drivers are translated into specific credit strategies. Organizations can accept or reject customers; apply pricing, limits, and other terms and conditions; and cut costs to meet their objectives.

Regulatory drivers also play an important role as banks formulate strategies. At the strategic level, Basel III mandates that financial organizations will need more and better quality capital. At the operational level, this will be translated to compliance initiatives and matching actual risk in an organization's portfolio with expected risk.

Several cross-processes come into play as well, such as strategic planning, credit risk governance and management, and capital planning and allocation. In this complex interaction of drivers, strategies and processes, two success factors are key:

- Banks have to focus on maximizing their risk-adjusted performance to make the best lending decisions given their business and regulatory constraints.
- Banks need consistency between their credit strategies and their strategic objectives. Lending decisions in the front office must be aligned to the bank's overall value creation objectives, using dynamic modeling.

Building a decision optimization framework

In practice, optimizing credit strategies simply means making the best decisions — adjusting factors such as acceptance criteria, collateral, pricing, limit setting and loan amount. However, multiple constraints can impact this maximization problem, such as risk appetite, volumes, market share or operational capacity. To achieve maximum value given these constraints, organizations need to identify who is creating value in their portfolio and who is not.

A well-designed decision optimization framework can provide a roadmap to developing a sound credit strategy. Based on step-by-step approach, this roadmap lets organizations define and test scenarios to develop a credit strategy that is best aligned with their business goals.

Optimization in practice

Building a decision optimization framework

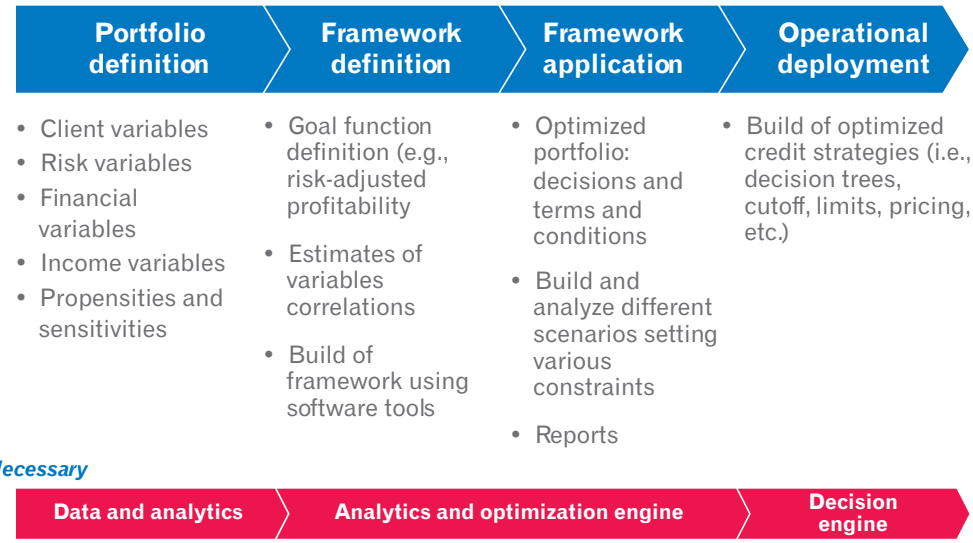


Figure 4: Experian's decision optimization framework is essential to modeling and enhancing credit strategies.

- **Portfolio definition —** The first step enables organizations to define their portfolio, such as a personal loan portfolio, credit portfolio, or small and medium-sized enterprises (SME) lending. In this phase, the bank would define factors such as client and risk variables, financial variables and income variables. Portfolio definition also takes into account customer propensities and sensitivities.
- **Framework definition —** The next step in decision optimization is defining the framework using software tools. This definition will include a goal function, such as risk-adjusted profitability. It also will include estimates of correlations between different variables. For example, if a bank increases loan pricing for a low-risk customer, that customer often will be more likely to reject a proposal. On the other hand, a high-risk customer might be more likely to accept simply because the funds are needed.
- **Framework application —** After a framework is defined, an organization can apply it to a specific portfolio, building and analyzing a variety of scenarios and setting different constraints. An analytics and optimization engine can report the outcome of each scenario as different scenarios are tested and refined.
- **Operational deployment —** The final step in a decision optimization framework is operational deployment, where the optimized credit strategies are actually applied to a bank's environment. Powered by a decision engine, these strategies can include decision trees, cutoff and limit details, specific pricing and other essential rules.

A business case for optimizing credit strategies

The bottom-up approach focusing on optimizing credit strategies can provide banks with an alternative to more traditional, top-down strategic initiatives. But how successful is this approach in practice?

Experian® tested this approach by developing a proof of concept for credit strategy optimization. This project utilized actual data from a portfolio of 35,000 personal loan applications submitted over a 12-month period. The objective was to maximize the lifetime value added (LTVA) of the personal loans portfolio under some constraints.

The results were compelling. By carefully optimizing credit strategies, banks can improve LTVA by almost 400 percent, with no increase in regulatory capital and no increase in default rate. To help ensure an accurate, "apples to apples" comparison, the proof of concept was developed under very specific conditions, testing scenarios with a similar number of booked accounts and a similar amount of exposure.

By carefully optimizing credit strategies, banks can improve LTVA by almost 400 percent, with no increase in regulatory capital and no increase in default rate.

Defining the portfolio and framework
For the purposes of the proof of concept, Experian defined LTVA as follows:

LTVA = Net Present Value (NPV) – cost of economic capital

This proof of concept utilizes a multi-tier cash flow model in order to estimate the expected economic value of the portfolio over its lifetime. All input regarding cost and revenue was provided by a bank, and Experian used reasonable assumptions based on best practices and our domain expertise in cases where information was missing.

Example

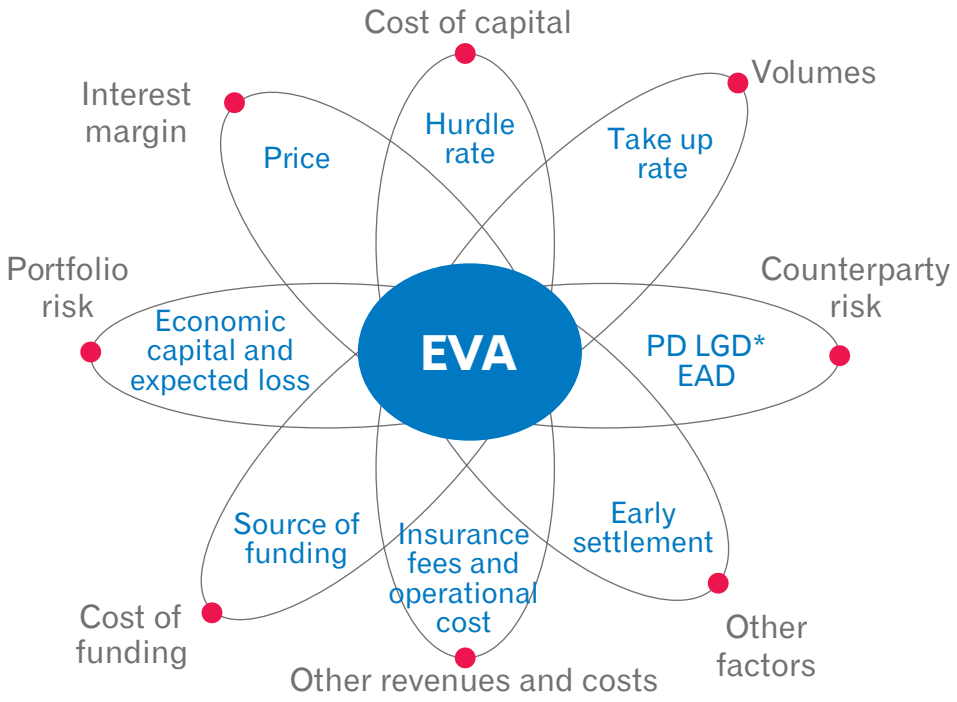
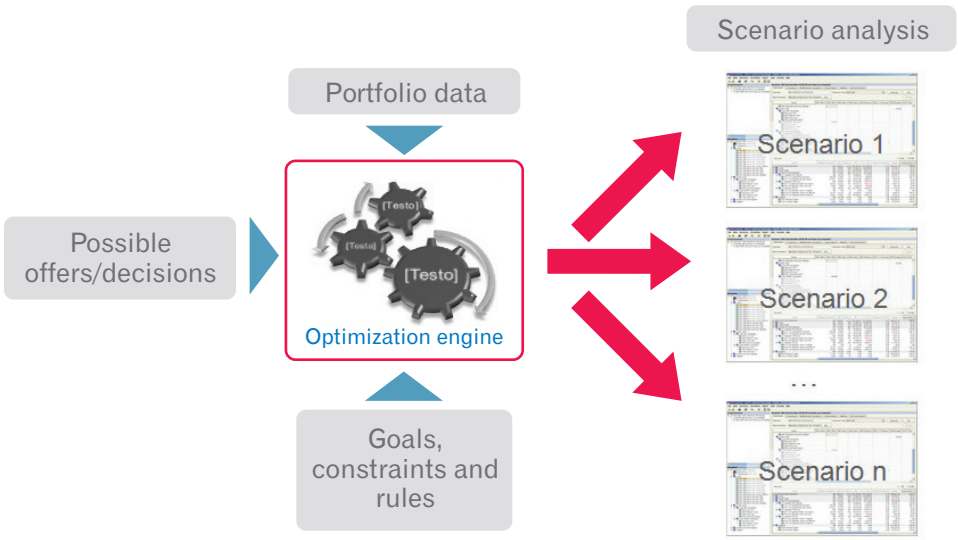


Figure 5: Economic Value Added (EVA) is influenced by multiple interrelated drivers.

A wide variety of drivers participate in value creation for the portfolio, including cost of capital, cost of funding, risk, interest margin and other factors. Many of these drivers are correlated with one another. Costs naturally play an important role, and customer elasticity is also very important for pricing. If an organization increases price, it can boost revenue but risk losing customers. Another important consideration is the "adverse selection" phenomena. An organization might increase prices and end up with a pool of customers who are at a high risk of default.

The framework implementation
How to obtain a set of optimized strategies



Experian applied its optimization framework to a proof of concept, testing a variety of scenarios.

Applying the framework

To apply the framework for the proof of concept, Experian applied portfolio data, a set of possible offers and decisions, its profitability goals, and constraints and rules to an optimization engine. The optimization engine processed the data and variables and produced a set of scenario analyses.

To define different loan strategies, the proof of concept started with combinations of three loan amounts and three prices.

This proof of concept tested two main strategies: reduction of loan amounts (by 10 percent and 20 percent of the requested loan) and increase of price (+100 and +250 basis points over the standard one). These strategies were designed to evaluate the appeal of different loan packages, as well as how they impact take-up probability. For example, a high price can make the offer less appealing, pushing clients away. A loan amount that is lower than requested also could force a customer to look elsewhere.

Experian also added a set of constraints to the framework. For each test portfolio, the regulatory capital, expected losses and bad loan rate could not be greater than "business as usual." Additional rules included the following:

- Debt-to-income ratio would have to be less than 70 percent for an applicant to be considered
- To control risk, applicants scoring less than a cutoff score were not admitted

How does the new strategy compare?
The results were revealing. The number of accepted applications increased under the optimized scenario, while the actual number of booked accounts remained approximately the same.

The total loan amount financed also remained approximately the same, at $251.18 million.

However, the LTVA showed a dramatic increase, from $2.15 million to $10.29 million — an increase of almost 400 percent.

Even as the value of the loan portfolio increased, the bad rate decreased from 9.93 percent to 8.8 percent.

Business as usual (BAU) versus optimized scenario

KPI	BAU	Constraint	Optimized	Change
Number of Booked Accounts	**14,214**	Not less than BAU	**14, 894**	4.8%
Number of Accepts	14,358	n/a	19,803	37.9%
Loan Financed	**$250.37m**	Not less than BAU	**$250.82m**	0.2%
Average Debt to Income Ratio	52%	n/a	35%	-32.7%
Expected Loss	$11.81m	n/a	$10.91m	-7.7%
LTVA*	**$2.14m**	**n/a**	**$10.27m**	**379.4%**
Regulatory Capital	**$26.77m**	Not more than BAU	**$26.29m**	-1.8%
RAROC**	8.01%	n/a	39.08%	3880.0%
Portfolio bad rate	**9.93%**	Not higher than BAU	**8.80%**	-11.4%

**Lifetime value added*
***Risk adjusted on capital*

Figure 7: The Experian proof of concept demonstrated that an optimized credit strategy can create a nearly fourfold increase in LTVA.

A tracked comparison of the business as usual approach, compared with an optimized strategy, shows this "efficiency frontier" in action.

The optimized efficient frontier
Bau versus the optimized strategy

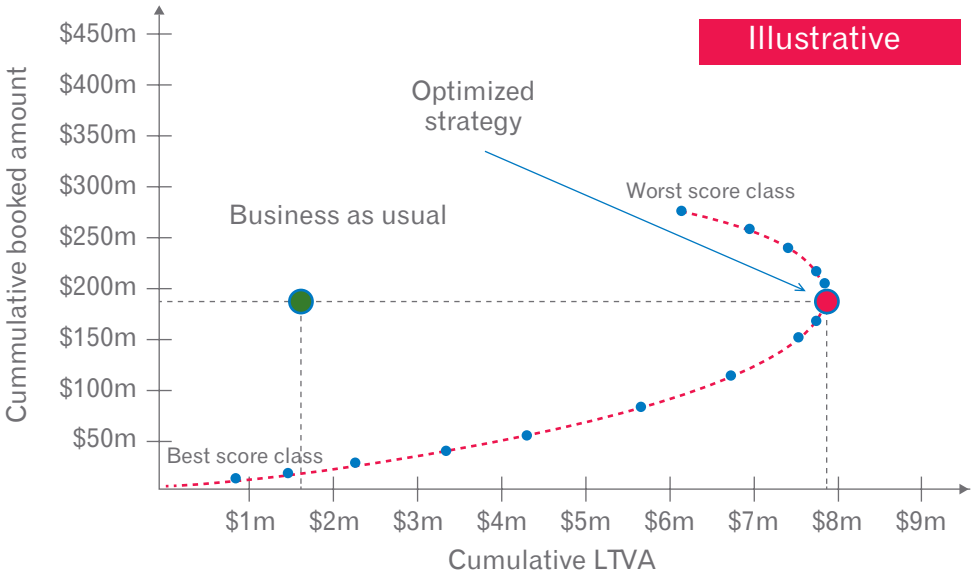


Figure 8: The optimized efficient frontier

What this means is that with the proper constraints in place, organizations can escalate their booked loan amount and dramatically increase the cumulative LTVA of their loan portfolio. On the other hand, accepting too many applications will begin to reverse the effect. The bad rate will begin to increase as riskier applicants are accepted, which begins to reduce the overall LTVA.

Experian also simulated a different scenario in its proof of concept where the bank wished to increase booked accounts by 50 percent. After this new constraint was applied, the LTVA of the loan portfolio increased by approximately 200 percent, compared with business as usual. Although less value was created, the bank was able to substantially increase its loan volume and perhaps create new opportunities through these additional customers.

A well-designed decision optimization framework will enable organizations to test a variety of different scenarios and implement the strategy that is best aligned with their risk appetite.

The optimized efficient frontier
Different curves for different risk appetites

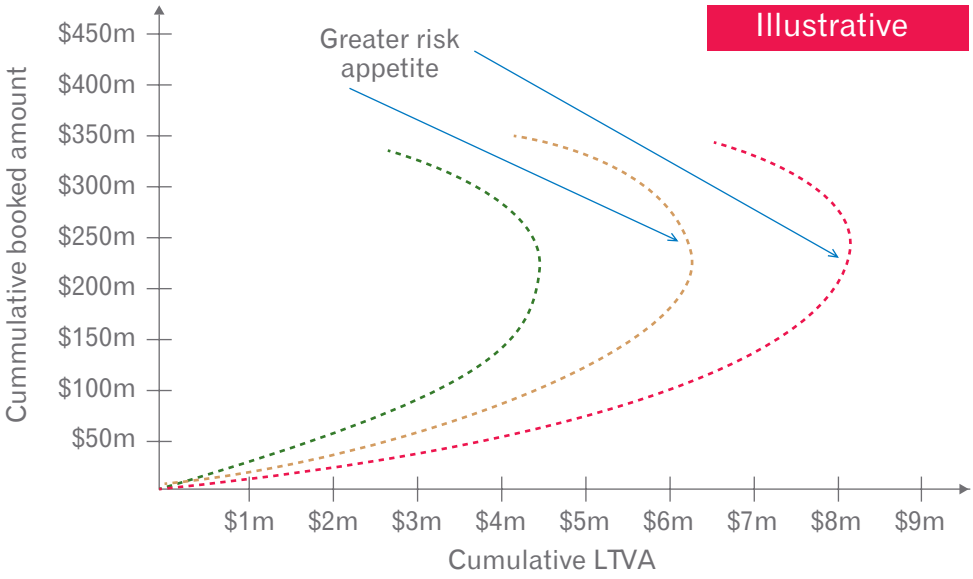


Figure 9: Organizations can apply different rules and constraints to develop a strategy for their specific risk appetite.

Conclusion

Experian's test business case demonstrates that analytical models and tools can help organizations not only address compliance issues such as Basel III, but also transform those regulatory requirements into a compelling competitive advantage. Applying a bottom-up approach to optimizing credit strategies is not only possible, but also highly effective in offsetting the negative impact of Basel III regulations. By improving their credit strategy, banks also can apply a powerful approach to RWA optimization.

This approach to RWA optimization also helps ensure that day-to-day credit decisions are always consistent with the bank's risk appetite and capital allocation plan. Banks also can take advantage of their credit strategy optimization environment to provide input into their capital budgeting process — and to help meet some key Basel requirements: Pillar II requirements.

The optimization framework is a powerful tool that can improve efficiency and profitability of organizations not only in the area of credit strategies and decisions, but also throughout several other areas of their business. These may include optimizing marketing offers to existing and prospective customers, optimizing the actions to be performed on customers in collections or maximizing the performance of pay/no-pay decisions in a credit card portfolio. In these and other business areas, the increase of performance that can be achieved when applying the optimization framework is usually outstanding.

About Experian Decision Analytics

Experian Decision Analytics enables organizations to make analytics-based customer decisions that support their strategic goals so they can achieve and sustain dramatic growth and profitability. Through our unique combination of consumer and business information, analytics, strategy and execution, we help clients to maximize and actively manage customer value.

Meaningful information is key to effective decision-making, and Experian is expert in connecting, organizing, interpreting and applying data, transforming it into information and analytics to address real-world challenges. We collaborate closely with clients to identify what matters most about their business and customers, then create and implement analytics-based decisions to manage their strategies over time.

In today's fast-paced environment where developing, implementing, and sustaining an effective strategy is imperative, Experian Decision Analytics helps organizations unlock a wealth of benefits immediately – and set the stage for long-term success.

Increased revenue: Our products and services enable clients to increase revenue by providing the insight and agility they need to find and engage the right customers, target products more effectively, and grow market share.

Controlled risk: A broad range of risk-management products and services help organizations verify identity and manage and detect fraud, optimize collection and recovery, and balance risk and reward.

Operational efficiency: Experian Decision Analytics helps organizations quickly integrate various information and processes to enhance operational efficiency and boost agility. Our flexible, collaborative approach helps organizations increase speed to market, enhance business agility and improve the quality of customers' experiences.

Compliance as differentiation: Proven expertise lets clients use compliance as a source of competitive advantage. Experian Decision Analytics helps ensure compliance with essential regulations, while helping organizations better understand customers.

About the author

Carlo Gabardo is Senior Business Consultants at Experian's Global Consultancy Practice and he is the Head of Experian Decision Analytics' Basel Centre of Competence.

Carlo has about fifteen years of experience in the credit risk management domain and during his career he has covered all the most relevant areas of the discipline for the main lending portfolios (Retail, Small Business, Corporate).

With the Global Consulting Practice, Carlo has lead many consulting projects across the world (Europe, Asia and Latin America), covering several areas (Basel, SME and Retail lending, Telecommunication etc.).

Before joining Experian D.A., Carlo has worked at Accenture Business Consulting, mainly operating in the Basel area and supporting major financial institutions in the implementation of complex "vertical" (models, process, IT systems) projects.

Carlo's experience started with Experian - Scorex, where he held several different roles ranging across delivery and consulting areas of the business. He worked mostly with Italian and Greek clients and he also managed the local consulting team and country operations in Greece.

Carlo has also worked several years at Prometeia, one of the leading economic research and financial risk consultancies in Italy. There he managed several projects for the design and implementation of credit risk management systems for important banking institutions also providing Basel advisory.

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