THINK ACT

BEYOND MAINSTREAM

June 2016

Better safe than sorry

Mastering hidden risk in the loan portfolio

Roland Berger

PLUS
ROLAND BERGER LOAN BOOK RISK COCKPIT
→ P.12/13

THE BIG 3

128

percent: the share of bank loans as a percentage of GDP in emerging markets in 2015 which reflects a significant increase in risks.

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key benefits can be expected from a loan book review (LBR).

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steps are required for a sound LBR. The Roland Berger Loan Book Risk Cockpit (RB LBRC) brings it all together.

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Entering stormy waters: Uncertain times ahead for banks.

Risk and cyclicality are inherent attributes of banking – but volatility in banking is intensifying. To successfully steer a bank through such turbulence, its executives must:

1. Obtain a solid understanding of the potential impact of economic downturns on the bank's loan book and income statement
2. Undertake preventive measures and closely monitor the development of the loan book
3. Take swift action upon early warning to prevent and minimize losses

While root causes differ, several banking crises, such as the US subprime mortgage crisis (2008) and the southern European sovereign debt crisis (2010), follow a similar pattern of four phases. → A

The first phase is characterized by a positive macroeconomic environment, such as a reduction of central bank rates, which leads to a period of substantial economic growth (phase two). This boom is accompanied by a similar expansion in financial assets, especially retail and commercial loans, over the course of a few years. A sudden shock (phase three), triggered perhaps by volatile oil prices or the burst of a market bubble, ensues the economic downturn (phase four). This is when banks see deterioration in their loan books and an increase in non-performing loans. If proper action is not taken or is delayed, capital injections or government interventions may be required to stave off default. In the worst case scenario, the entire financial sector can be at risk, its high levels of interdependencies keeping no one out of harm's way.

Today, bank lending in emerging markets has ballooned, from about 77% of GDP in 2007 to 128% in 2015 according to JP Morgan. A Roland Berger analysis reveals that countries around the globe have experienced strong growth in commercial loans, reaching as high as 61% in some places. → B

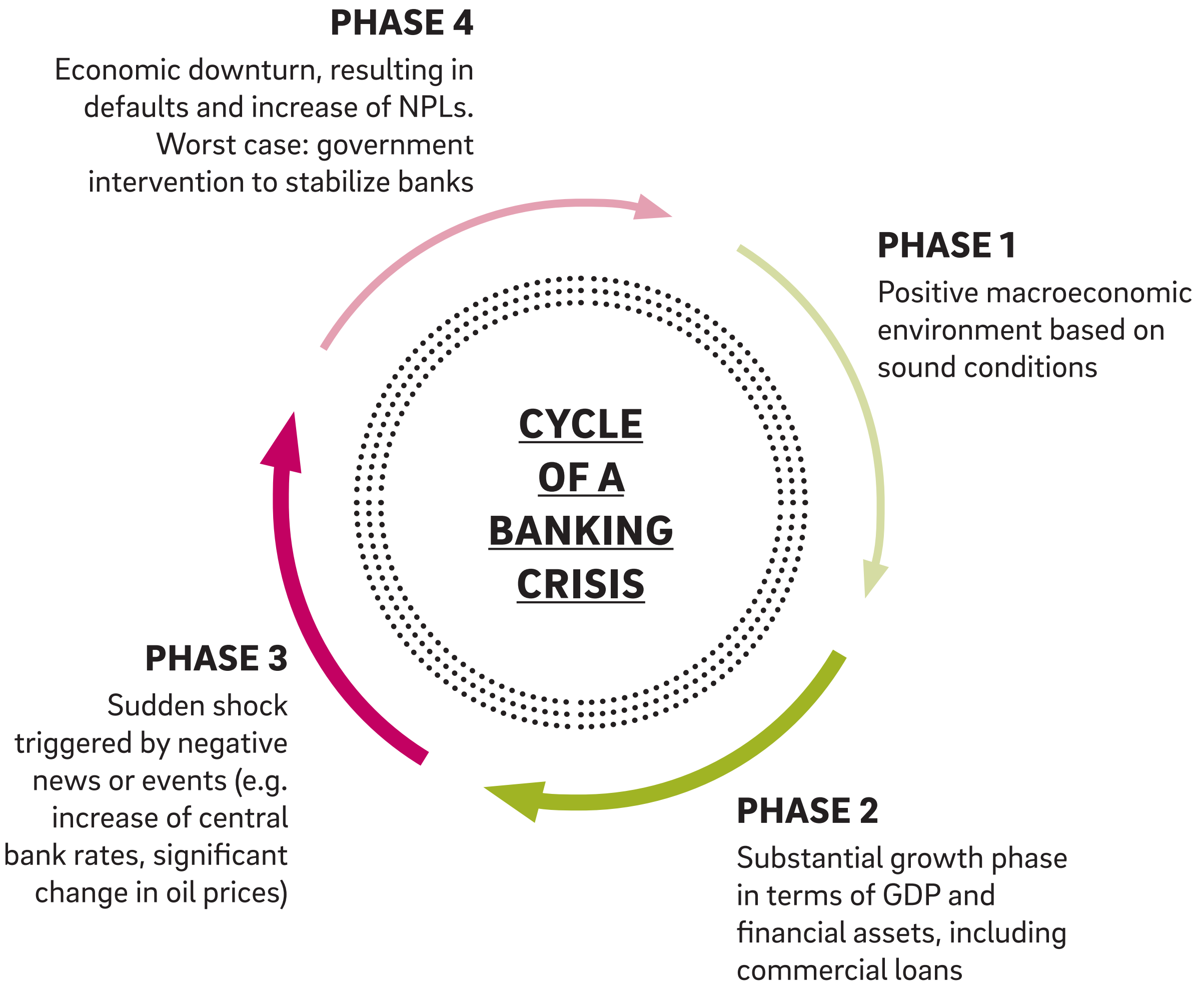
"If you owe your bank a hundred pounds, you have a problem. But if you owe a million, it has."

John Maynard Keynes

A

TYPICAL CYCLE OF A BANKING CRISIS

Illustration

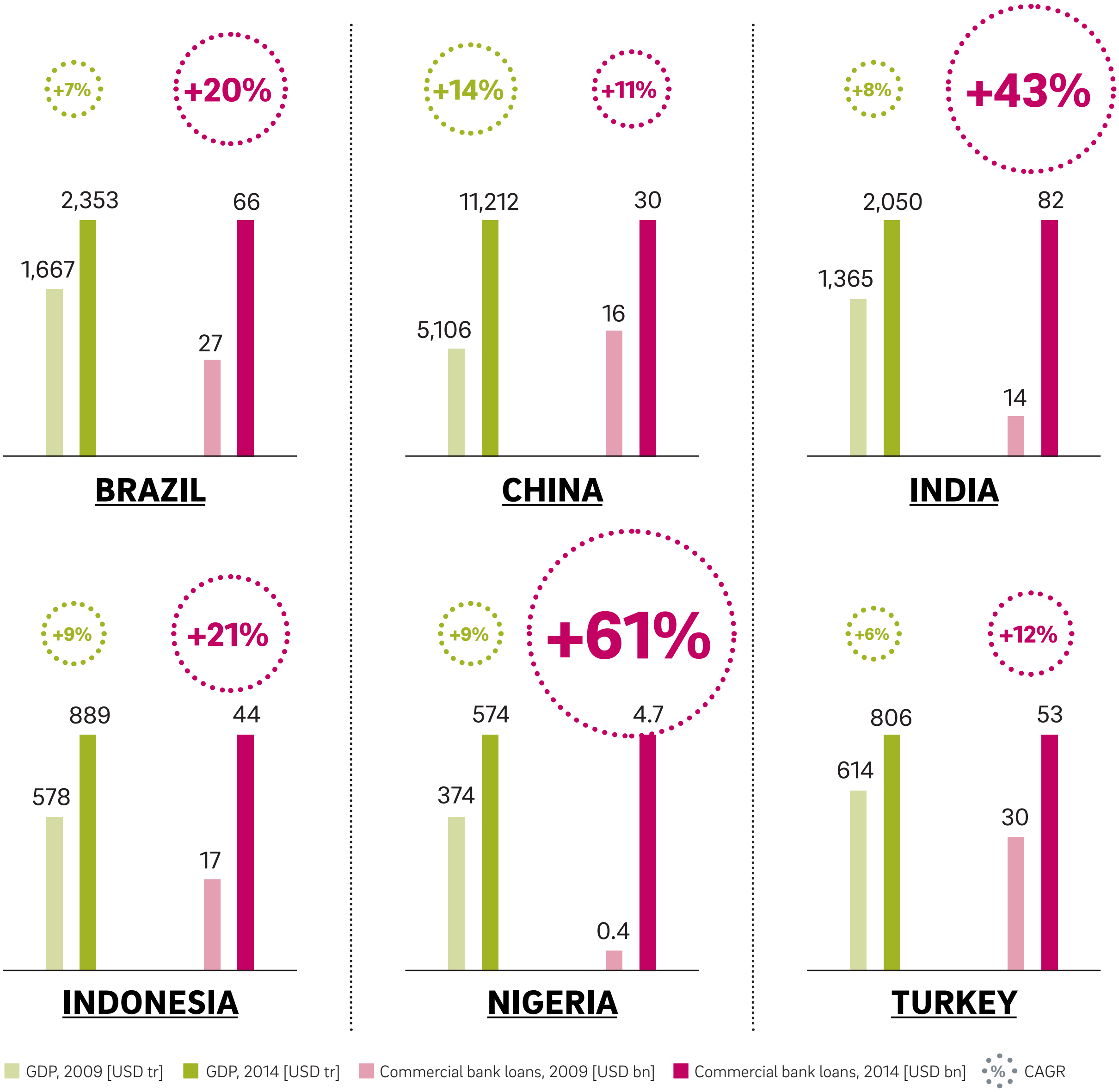


Source: Roland Berger

B

PHASES ONE AND TWO OF ANOTHER CRISIS

Commercial loans growing fast in major emerging economies since 2009



Source: International Monetary Fund; World Economic Outlook Database; EIU

Phase three is just around the corner: several of these markets are either already experiencing economic slowdown or expect worsening economic outlooks:

AMERICAS

Central bank data in **Brazil** suggests that loan defaults are likely to rise as the nation's deepest recession in decades and rising credit costs are straining borrowers (early default ratio of corporate loans rose to 3.5% in January 2016).

AFRICA & MIDDLE EAST

In 2016, the IMF warned that **Nigeria's** financial system could collapse in the face of plunging oil prices, leaving the biggest borrowers in serious financial straits.

S&P expects the ratio of non-performing to performing loans for its covered banks in the **UAE** to climb to ~4% or higher over the next four to six quarters. Banks have started to cut credit lines to SMEs after a spate of defaults.

ASIA

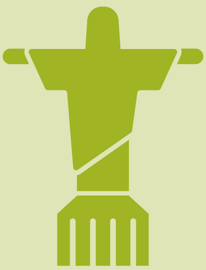
Indonesia's banking sector is likely to face difficult conditions throughout 2016 due to sluggish economic growth, falling commodity prices and currency depreciation that will weigh on asset quality and profitability, according to the S&P.

EUROPE

In **Turkey**, the non-performing loan ratio rose to 3.18% of total credit in January 2016, the sixth straight monthly increase and the highest proportion in almost five years.

Sooner or later, these developments will hit banks, testing the quality of their loan books. As risks may reach across borders, it is time for banks, no matter where they are, to get themselves prepared. Banks in emerging and developed markets should conduct a thorough loan book review (LBR) as well as develop and implement a comprehensive and effective early warning system (EWS).

DID YOU KNOW...



... at the end of 2015, 59 million Brazilians were behind payment on utility bills, had defaul-ted on loans or had checks bounce

... in the UAE, with its high share of expats, many banks face the challenge that borrowers leave quickly once they default

... some banks in Germany approve restructuring agreements in less than 24 hours

Loan book review and early warning system: More than preventive measures.

Getting a thorough understanding of the loan book serves a wide variety of purposes. These are not limited to simply a better understanding of the existing risk exposure, but this understanding also serves as the basis to derive improvement potential for processes, standards and guidelines, as well as for developing an early warning system.

IMMEDIATE BENEFITS: INSIGHTS AND PREVENTION OF ADDITIONAL LOSSES

Three key benefits immediately arise from a comprehensive loan book review:

1. TRANSPARENCY AND NEW INSIGHTS INTO THE QUALITY OF THE LOAN BOOK

Banks generate a substantial amount of data when interacting with clients and assessing their risk. However, credit risk is frequently only assessed via "rudimentary" analytics, i.e. limited to a few traditional financial indicators. These indicators do not encapsulate the full picture of credit risk and are typically backward-looking. As a result, traditional credit reports and risk scores do not provide a reliable and transparent view of the underlying risks. There is significant and untapped potential to enhance risk assessment capabilities and to implement a truly foresighted protective approach.

"Slicing and dicing" the loan book via an extended assessment approach that includes a broad range of non-financial and behavioral indicators provides new angles for and insights into the composition and quality of a loan book. For instance, a loan book review will detect imbalances built up in boom phases, as well as exposure to certain industries. The review will also facilitate the alignment of specific client segments with the strategic goals of the bank, and be able to determine the impact of concentration risk on the bank's balance sheet in different scenarios and define mitigation measures.

2. EARLY IDENTIFICATION OF RISKY CLIENTS

An ongoing and mostly automated review of the loan book based on appropriate early warning indicators helps to reveal deteriorating and high-risk clients before they reach delinquent status. Acting first to run down client exposure or increase collateral levels will ultimately put the bank in a better position in case a main lender pulls the plug. Improving the recovery rate means real cash in hand, and will be directly reflected in the income statement. Early identification capabilities of potential risks become a competitive advantage in risk management.

3. AVOIDANCE OF SUDDEN PROVISIONS AND LOSSES

Banks facing an economic recession or decline are usually hit twofold: shrinkage of the loan book constricts gross interest income, and the legacy of a previously ballooned loan book – entailing low-quality clients – drives up provisions on non-performing loans. The delay in provisions means that both effects hit the income statement at the same time. → C

In some cases, banks tighten their credit underwriting guidelines even further. In order to avoid entering this downward spiral, banks need to act early: stretch provisioning over a longer period of time, circumvent provisioning entirely, and, if needed, start identifying future capital needs as soon as possible. An in-depth loan book review builds the solid foundation necessary to take suitable preventive measures and to become aware of – and ready for – the looming risks ahead.

MID-TERM BENEFITS: IMPROVEMENT OF PROCESSES AND STANDARDS

Beyond its immediate benefits, a loan book review can derive additional conclusions that can be used to improve a bank's processes and standards in the mid-term.

1 STRENGTHENING CREDIT UNDERWRITING

A loan book review's insights can serve as the basis for enhancing underwriting guidelines. Simply put, avoiding risk at its origination without letting it enter the loan book is what banks strive for. A deep understanding of the evolution of non-performing loans from origin to default and ultimately to write-off enables the detection of predictive default patterns that can be taken into consideration during underwriting. Integrating non-financial indicators into the formal credit underwriting process substantially increases the underwriting department's ability to determine client risk.

2 IDENTIFYING IMPROVEMENT AREAS IN IT/OPS PROCESSES

Over the course of the loan book review, shortcomings or improvements in the quality and availability of data become apparent. Frequently, sufficient client information is available – usually on the branch level – but is neither centralized nor updated throughout the entire bank. Such "information islands" need to be resolved and IT/ops processes redesigned to ensure data flow in line with the target operating model.

3 ALIGNING STRATEGY WITH BOTTOM-UP FINDINGS

Findings from this bottom-up loan book review must also be seen in light of the bank's strategy. That way the loan book review can help answer questions such as: Is the bank's risk-return target in line with reality? Are the growth ambitions realistic considering the quality of the underlying loan book? The alignment of strategy with the reality of the loan book should not stop short of taking guidelines and KPIs of relationship managers into consideration.

DEVELOPMENT OF AN EARLY WARNING SYSTEM

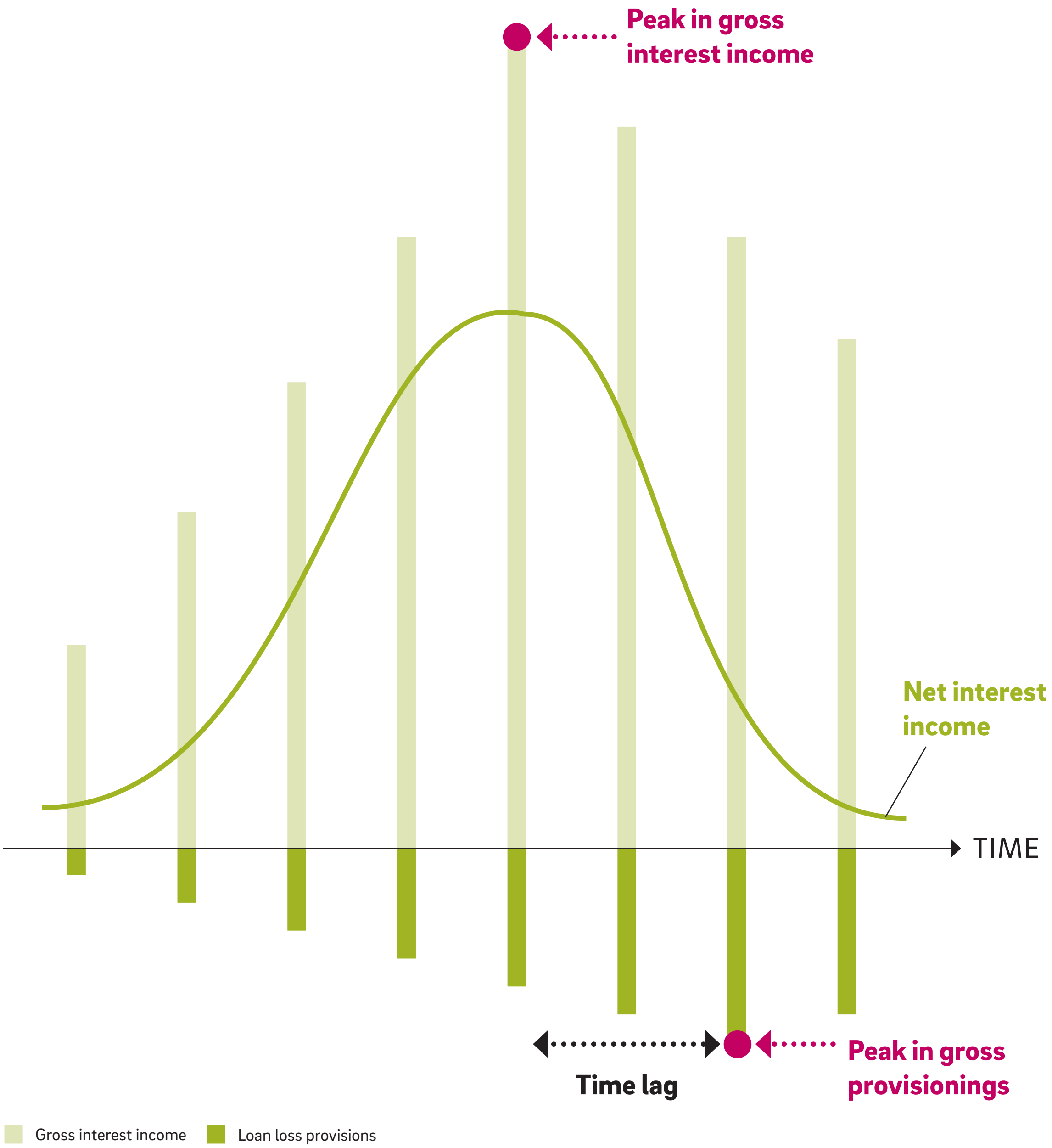
Flagging clients with deteriorating payment capabilities early on is the primary requirement for an effective EWS. A loan book review will help uncover predictive indicators thanks to its deep insights into the behavioral development of clients. However, an EWS can also be developed and implemented without conducting a loan book review by analyzing an exhaustive list of potential early warning indicators over a longer period of time.

While financial indicators need to be part of an EWS, the EWS must take into account that company financials are available with a delay of several months and often lack predictive power. Given the predictive power of various non-financial and behavioral indicators (e.g. account activities, business behavior, etc.) there is sound rationale to apply such factors in an EWS, bringing an entirely new angle to a company's risk management with real forward-looking elements.

C

THE SIMULTANEOUS, TWOFOLD HIT ON THE BANK'S INCOME STATEMENT

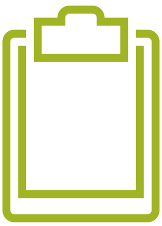
Illustration



Source: Roland Berger

Conducting a loan book review and establishing an early warning system.

Based on several assignments – most recently in the UAE, Turkey and Central and Eastern Europe – Roland Berger has developed a proprietary Loan Book Risk-Cockpit (LBRC) which provides an overview of risk levels in the loan book in real time. A major component of this risk cockpit represents the early warning system. → D



1. RB LONGLIST OF RISK INDICATORS

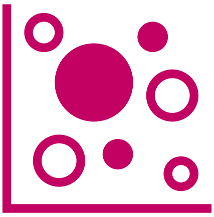
A consolidated longlist of risk indicators serves as the starting point. The longlist ranges from traditional financial and banking indicators to operational and behavioral ones.

2. DATA SELECTION

The longlist is then matched with the bank's existing database and additional, external data sources (e.g. central bank data, commercial registries, etc.). After consolidating all relevant indicators, any remaining data incompleteness is tackled. Depending on the availability of data, this exercise may also require the involvement of relationship managers on the branch level.

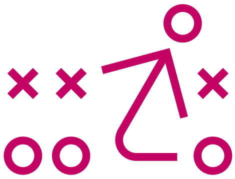
3. PRACTICAL VALIDATION

Prior to conducting the quantitative validation of risk indicators, each indicator is closely evaluated with respect to the current environment. Depending on the country, major differences in the business environment (e.g. business practices, payment behavior, bankruptcy law, etc.) can have a substantial impact on the usability of indicators. What's more, assessing the environment in the specific country can reveal new indicators that are otherwise inapplicable to other countries.



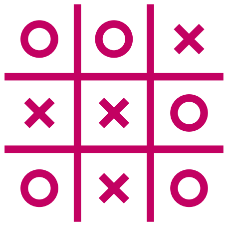
4. QUANTITATIVE VERIFICATION

A comprehensive analysis of the loan book and statistical validation of the selected risk indicators are then conducted. Historical data on performing and non-performing loans – frequently measured by days past due and inflow into the restructuring portfolio – reveals solid information about potential indicators. Extensive backtesting ensures indicators' suitability and predictive power.



5. DESIGN & INTEGRATION OF THE EWS

In order to guarantee a fully-automated EWS, an action plan for implementation into the existing IT system is developed. Beyond IT functionality and proper flag -ging of potentially delinquent clients, internal processes and guidelines for flagged clients need to be defined.



6. SETUP & PROCESS VALIDATION

Finally, ownership of the LBRC and EWS is clearly transferred and integrated into the bank's organization and processes. Functionality and underlying risk indicators are regularly challenged and may be expanded. Backtesting of historical data serves best to assess the model's accuracy over time.

The RB LBRC consolidates and summarizes key insights and findings based on reliable and standardized data. It provides an overview of the bank's loan book, its meaningful client segments and the output of the EWS on the basis of real-time data. The level of detail given in the LBRC can be modified for different users. For example, a high-level view and development over time are usually most suitable for board members, while management and operations can be provided a more detailed view. By transferring output from the extensive loan book review into this "cockpit", key insights and lessons from the exercise can be transformed into a lasting, value-adding tool. → E

D

ROLAND BERGER LOAN BOOK RISK COCKPIT APPROACH – ILLUSTRATION

Comprehensive visualization of portfolio risk on the basis of real time[1)] loan book data, with customized levels of detail (overview for board level, zoom-in for management, etc.)

TOP-DOWN PREPARATION

1. RB LONGLIST OF RISK INDICATORS

Longlist of proven risk indicators collected over multiple assignments serves as the starting point for the analytical model

2. DATA SELECTION

Longlist matched with available portfolio client data from bank. Additional data sourced elsewhere if necessary

3. PRACTICAL VALIDATION

Assessment of indicators with respect to local specifics (e.g. business practices, bankruptcy law, etc.)

BOTTOM-UP IMPLEMENTATION

4. QUANTITATIVE VERIFICATION

Statistical verification of selected risk indicators and possible adjustments on the basis of historical loan book data

5. DESIGN & INTEGRATION OF RB LBRC AND EWS

EWS integrated into existing IT systems. Appropriate data management for operating Roland Berger Loan Book Risk Cockpit is ensured

6. SETUP & PROCESS VALIDATION

Regular backtesting of underlying indicators and review of predictive power of EWS. Additional indicators are also tested

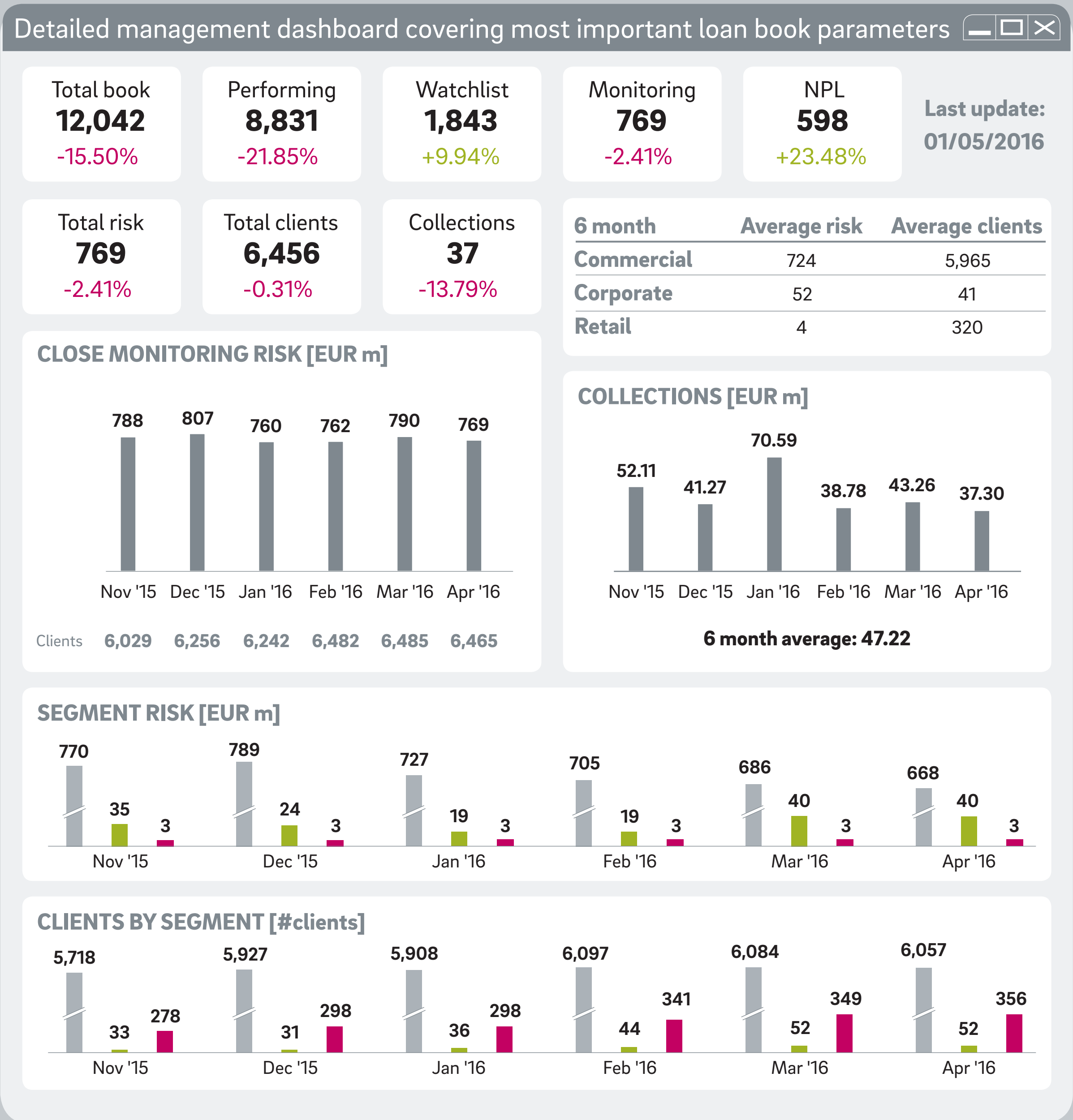
Typical length of a loan book review: 8-12 weeks[2)]

1) Implementation highly dependent on capabilities of IT department 2) Average duration varies substantially (depending on client's individual needs)

Source: Roland Berger

E

SCHEMATIC VIEW OF A MANAGEMENT DASHBOARD



Commercial Corporate Retail

Source: Roland Berger

The three key success factors for loan book reviews and early warning systems.

KNOW YOUR CUSTOMER

The primary condition for success is the KYC principle: know your customer. It may sound obvious, but given today's higher fluctuation in branch relationship managers, the rapid loan growth, and the gradual shift toward online client interaction and processes, sufficient customer understanding cannot be guaranteed. A loan book review is the best way to determine the completeness and quality of information on the customer base and to fix problems that are detected. The challenge of collecting information lies in "separating the signal from the noise". Banks are good at collecting data, but picking out the reliable and relevant information from this enormous pool of data requires a sound methodology and vast experience.

LOOK BEYOND TRADITIONAL FINANCIAL INDICATORS

Notwithstanding the value of the latest client financial statements, the foundations of decision-making with regard to those clients require a much broader set of data. Combining financial and non-financial indicators for detecting patterns has proven to be the most fruitful in a loan book review. Particularly for SMEs in emerging markets, financials are often of limited value in assessing client risk. Though non-financial and behavioral indicators may be more difficult to include, this should not stop them from becoming a part of the loan book review.

CUSTOMIZE YOUR APPROACH

Even though a loan book review follows certain steps, there is no one-size-fits-all approach. It must be adjusted to both external and internal factors as well as to the particular needs of the bank. Country-specific aspects, such as bankruptcy law, are crucial elements that must be taken into consideration. Macroeconomic factors have diverging impact on industries and therefore need to be evaluated in line with industry-specific developments. On top of this, the bank's general positioning in the market largely defines its exposure and risk profile, and must be reflected in the conclusions derived from a loan book review.

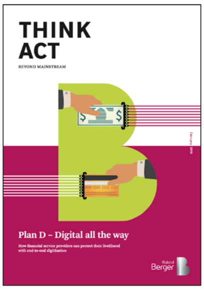
The loan book review and early warning system are the basis of a sound understanding of a bank's solidity. With its Loan Book Risk Cockpit, Roland Berger combines both into a lasting tool for the bank and its future.

Achieving a superior understanding and prediction of risk has been and will always be a key lever in a bank's competitive edge. A loan book review and early warning system are important decision-making tools for executives. Financial downturns have proven that it's better to be safe than sorry. ◆

ABOUT US

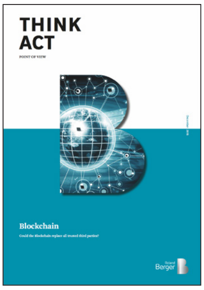
Roland Berger, founded in 1967, is the only leading global consultancy of German heritage and European origin. With 2,400 employees working from 36 countries, we have successful operations in all major international markets. Our 50 offices are located in the key global business hubs. The consultancy is an independent partnership owned exclusively by 220 Partners.

FURTHER READING



PLAN D – DIGITAL ALL THE WAY

"Digitization is revolutionizing the finance industry. Shifts in clients' behavior, new competitors and regulatory changes are breaking up and redefining existing value chains. Financial service providers must make a concerted effort to launch the digital transformation of their business model. This study sheds light on how to master the challenge of change, especially how to successfully drive implementation."



BLOCKCHAIN – COULD IT REPLACE ALL TRUSTED THIRD PARTIES?

Forget Bitcoin. Blockchain – the technology behind it – is what everybody is on about. As outlined in this Think Act Point of View, this decentralized ledger promises to disrupt banking first and everything else second. Yet many hurdles, including a lack of standardization, need to be overcome to unleash its full potential.

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