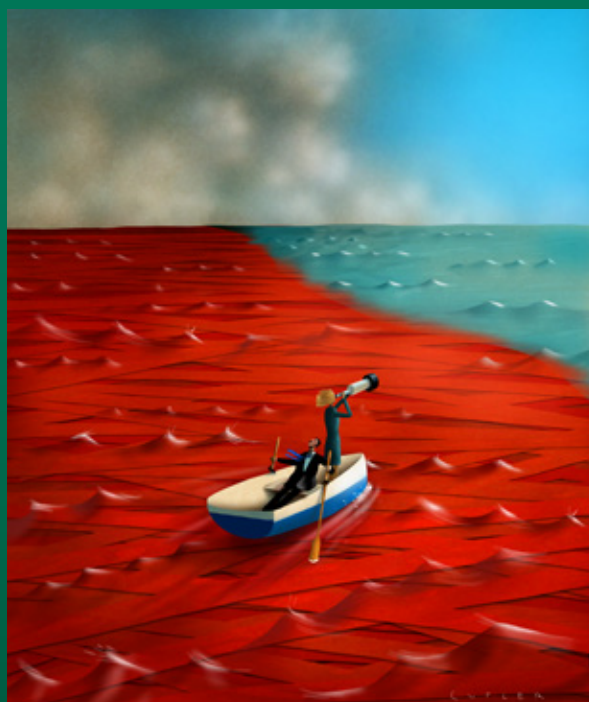


GLOBAL RISK 2017

STAYING THE COURSE IN BANKING



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GLOBAL RISK 2017

STAYING THE COURSE IN BANKING

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CONTENTS

- 3 OVERVIEW
- 6 THE ECONOMIC PROFITABILITY OF GLOBAL BANKING
INCHES HIGHER
Regional Divergence in Economic Profit
Outlook: Focusing on Resources
- 10 REGULATION: AN ERA OF CONSTANT EVOLUTION
Financial Stability
Prudent Operations
Resolution
- 18 AN AGENDA FOR STAYING THE COURSE IN
GLOBAL BANKING
- 19 FOR FURTHER READING
- 20 NOTE TO THE READER

OVERVIEW

THE BANKING INDUSTRY CONTINUES on the road to recovery, staying the course of recent years. The globally averaged performance of banks, measured by economic profit (EP), inched higher in 2015 for the fifth year in a row, according to BCG's seventh annual study of the industry's health. Our study assessed the EP of more than 300 retail, commercial, and investment banks in 2015.

Banks' performance comes against a backdrop of intensifying regulation. As we forecast in 2016, the seas of regulatory change have continued to surge worldwide, producing a strong impact on banks' strategic and operational planning efforts. Coping with regulation, therefore, must remain a priority. The increasing costs of doing so will pressure all banks to create more effective and efficient processes. Top performers will use the opportunity to incorporate technical innovation even as they optimize the allocation of scarce financial resources.

Economic Profitability

Despite the steady, if slow, global improvement, banks' performance diverged considerably by region. At the same time, the gap between high-performing banks and those performing below par continued to widen in some regions.

In Europe, banks' balance sheets continued to contract, and their negative EPs remained at the level of the previous year. Income rose, but so did operating costs, and the slight reduction in risk costs wasn't sufficient to regain positive EP. Moreover, the divergence between top and bottom performers in Europe continued to grow, unlike in North America, where the range of EP was stable.

Banks in North America continued on a positive path. Their balance sheets grew, and they reduced both operating and risk costs. Changes in income did not significantly affect EP.

Bank performance in other regions was similarly diverse. In the Middle East and Africa results continued to improve, while the EP of Asia-Pacific banks shrank slightly. Banks in South America experienced a sharp decline in performance, mainly as a result of increased risk costs.

We have observed that leading banks in the West are focusing on tight and efficient management of resources and costs to tackle the challenges of bolstering and building EP. Also, these banks are finally focusing on regulation at all levels of strategic and operational planning.

Regulation

The era of constantly evolving and increasing regulatory requirements persists. The number of individual regulatory changes that banks must track on a global scale has more than tripled since 2011, to an average of 200 revisions per day.

We have identified three overarching themes in this evolution. The first is that increasing regulation is here to stay—much like a permanent rise in sea level as opposed to an incoming tide that will ebb. We expect this theme to hold despite recent political developments in the US that may augur critical challenges to regulatory implementation. While many of the major, top-priority reform packages are already in place, banks will now face the burden of implementing technical regulatory measures and responding to audits. Second, actions by individual jurisdictions, rather than by globally coordinated initiatives, will remain the source of most new and changing requirements that banks must comply with. Third, the influence of regulation on strategic and operational planning will continue to be significant; for example, regulation still consumes the largest share of banks' project portfolios. For all three reasons, tracking and complying with regulation needs to remain high on banks' agendas.

To assess the current status of regulation, we organized the global spectrum into three clusters: financial stability, prudent operations, and resolution.

- **Financial Stability.** This is the most developed area of reform, although evolution continues. Capital remains the name of the game, as pressure by investors and peers pushes capital requirements higher. Achieving Common Equity Tier 1 ratios above 12% seems to be a minimum goal. The Basel IV reform package, however, is adding both uncertainty and complexity to this environment. The leverage ratio is the second most important indicator in the capital game. We believe that the minimum ambition level for this ratio will rise to 5% to 6%. Stress testing will gain importance, from both a quantitative and a qualitative perspective. The latter perspective requires a governance framework that includes audit processes on scenario relevance and the use of stress test results for management decisions and bank steering.
- **Prudent Operations.** Since the 2007–2008 financial crisis, strict regulatory enforcement has brought cumulative financial penalties

of roughly \$321 billion (through the end of 2016). While US regulators have assessed most of the fines, their counterparts in Europe and Asia will likely step up the pace. Managing these costs is a major burden for banks, requiring the creation of a strong non-financial-risk framework to avoid errors of the past. Changing values and ethical standards are already reframing banks' business judgments and individual executives' decision making, as the question "Was it lawful?" becomes "Was it legitimate?"

- **Resolution.** Relative to other areas of reform, resolution remains the least developed and most pressing. There is still no consensus on how to close down (or unwind) banks or on which preparatory, structural measures might be needed. However, some potentially significant contributions to bank resolution are emerging from measures that have already been implemented by some banks or that have been specifically requested by regulators in certain jurisdictions. These include both quantitative and structural adjustments and changes. Quantitative measures include increasing liquid assets, ensuring sufficient "bail-in-able" debt, and reducing balance sheet size. Structural measures include the implementation of nonoperating holding structures at the group or intermediate level within a specific jurisdiction, the reduction of legal-entity complexity, the separation of critical economic functions (which often relate to home markets), and the provision of solutions out of separate service entities.

An Agenda for Staying the Course

Ultimately, managing regulations will remain high on the agendas of banks' risk and steering teams. Defining an efficient mode of interaction between banks and regulators will be a critical task. However, there are two additional challenges to staying the course using a resource-based strategy.

Bank steering functions, for one, will need to become more involved and effective in overall cost management. Their tools for doing so are varied—from adjusting the organization and operating models to harnessing the strong potential of new technologies. Partnering with both fintech and regtech startups can provide access to innovative capabilities and solutions relevant to bank steering. Offerings include more flexible IT infrastructures that are based on advanced analytics and big data and on improvements in process efficiency and automation.

Nonetheless, banks must not forget that their risk and steering functions are responsible for optimizing the scarce financial resources of capital, liquidity, and funding. Success will require closer collaboration of those functions and more integrated management of the banks' P&L and balance sheets.

THE ECONOMIC PROFITABILITY OF GLOBAL BANKING INCHES HIGHER

ALMOST TEN YEARS AFTER the global financial crisis, the banking industry still has not completely recovered. Yet the findings of BCG's seventh annual study of the industry's health clearly show that improvement continues.

To determine the overall health, risk profile, and performance of global banking, BCG assessed the EP generated by more than 300 retail, commercial, and investment banks in 2015. The benchmarking accounted for more than 80% of all banking assets worldwide. EP, averaged globally and adjusted for risk costs, inched higher in 2015 for the fifth year in a row. It was the third consecutive year of positive EP performance worldwide, as the industry continues its recovery from the financial crisis that began in 2007.¹

The range of EP generation among banks varied greatly by region.

Tallied globally, banks created positive EP of €159 billion in 2015, or 18 basis points as a percentage of total assets. This is the highest value created since the postcrisis years of 2009 through 2014, when EP ranged from -24 to 17 basis points. (See Exhibit 1.)

The global increase in EP in 2015 was driven by the positive regional performance in North America, the Middle East, and Africa, where banks continued to surge ahead. In Europe, banks have stalled in their struggle for recovery. Asia-Pacific banks' EP shrank modestly compared with their performance in 2014, while South American banks' EP fell by nearly half.

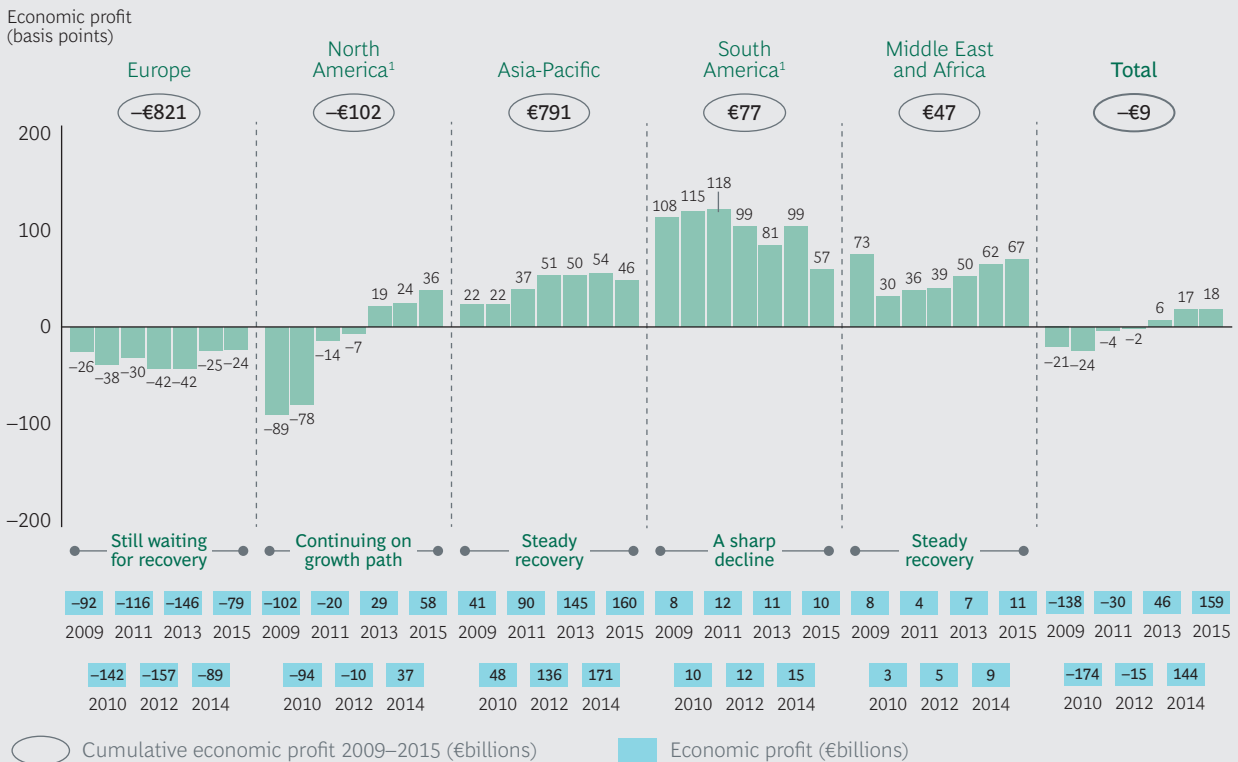
Regional Divergence in Economic Profit

Performance on individual components of EP also varied widely, revealing the divergent regional paths that banks have taken in their attempts to achieve positive value. (See Exhibit 2.) The range of EP generation among banks—and the gap between top and bottom performers—varied greatly by region as well. In Europe, that gap continued to widen; in North America, however, the range of EP was stable.

Europe. The balance sheets of European banks are still shrinking, which, combined with low margins, makes profit generation even more difficult. Net interest income has remained almost flat since 2012, and fee and commission income, as well as trading income, have stagnated. Banks have not been able to reduce their cost bases, operating costs have risen even higher than they did directly after the crisis, and risk costs remain twice as high as before the crisis for both loan

EXHIBIT 1 | The Economic Profit of Banks Continues to Improve in North America, but Not in Europe

ECONOMIC PROFIT GENERATED BY GLOBAL BANKS, RELATIVE TO TOTAL ASSETS, 2009–2015



Sources: Annual reports; Bank Scope; Bloomberg; BCG Risk Task Force database; BCG analysis.
Note: Exchange rates at the end of 2015 are used for comparability. Values may not add up to the totals shown because of rounding.
¹Total assets are lower than in Europe and Asia-Pacific because of local and US generally accepted accounting principles.

loss provisions and capital costs. Even though the cost of equity is decreasing, the increase in equity volume has kept the total effect at a consistently high level. The main year-on-year change from 2014 to 2015 was an increase in operating costs of 11 basis points, incurred as banks continued to restructure. The increase was mitigated by the combination of the remaining components, resulting in a nearly constant result overall.

However, the gap between top performers and bottom performers in Europe continues to expand. Top performers have attained success mainly by controlling operating and risk costs, whereas bottom performers labor under extremely high risk costs.

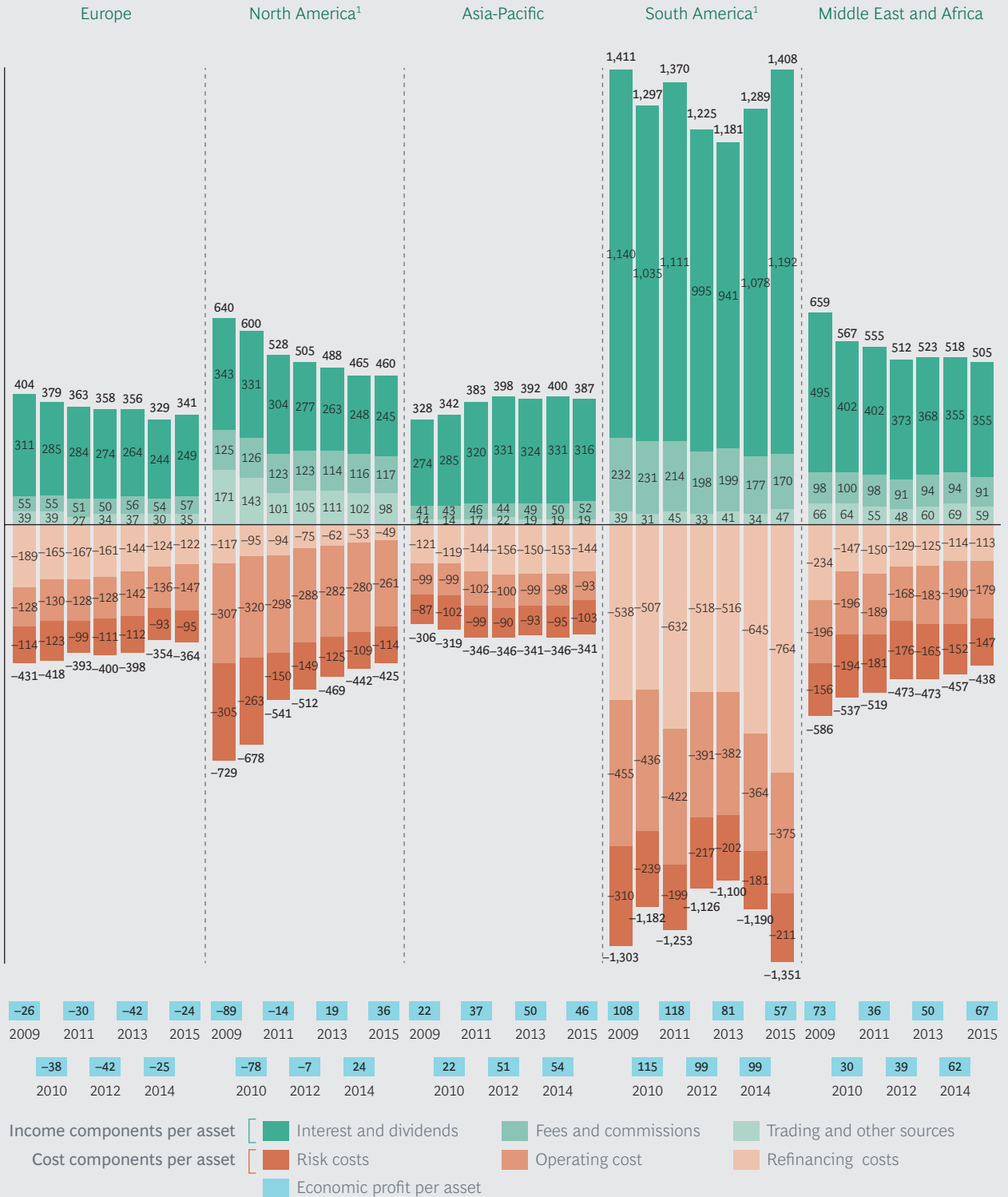
North America. For banks in the US and Canada, unlike those in Europe, balance sheets continue to grow, improving the basis for income. However, on a per-asset basis, net interest income for North American banks

has been decreasing since 2010, revealing the pressure on margins. Fee income, however, has been increasing since 2013 and is a stabilizing factor for P&L contribution, while trading income has declined. But the overall decrease in income has been mitigated by a clear reduction in operating costs and risk costs since 2010, a major difference between banks in North America and those in Europe. Even though risk costs rose slightly in 2015 compared with 2014, those costs were nearly two-thirds less than in 2010. Therefore, overall EP generation increased by 50%, from 24 to 36 basis points, from 2014 to 2015.

A further difference between European and North American banks was the narrowing range of EP generated in North America, where the results of the bottom performers, while still negative, have improved greatly since 2013. The bottom performers in North America have been affected less by higher

EXHIBIT 2 | The Components of Economic Profit Varied Widely by Region in 2015

COMPONENTS OF ECONOMIC PROFIT GENERATED BY GLOBAL BANKS, RELATIVE TO TOTAL ASSETS, 2009–2015 (BASIS POINTS)



Sources: Annual reports; Bank Scope; Bloomberg; BCG Risk Task Force database; BCG analysis.

Note: All values are per asset; that is, the total value in euros divided by the total assets in euros. Values may not add up to the totals shown because of rounding. The order of regions shown reflects a focus on Europe and North America; the remaining regions are sorted according to total assets. Exchange rates from the end of 2015 are used for comparability.

¹Total assets are lower than in Europe and Asia-Pacific because of local and US generally accepted accounting principles.

risk and operating costs than by deterioration in net interest income.

Asia-Pacific. The EP of banks in Asia-Pacific stayed positive in 2015, though it declined to 46 basis points from 54 in 2014. Despite the growth of assets, net interest income and trading income on a per-asset level have remained nearly flat since 2011, though fee income rose slightly. Operating costs have continued to decrease since 2011, but risk costs have risen for three consecutive years. The range of EP for Asia-Pacific banks has narrowed because the weaker players' performance has remained steady while the top players' results have declined.

South America. After a period of very high EP from 2009 through 2014—during which EP ranged from a low of 81 basis points to a high of 118—the performance of banks in South America declined sharply, to only 57 basis points, in 2015. With growing balance sheets, net interest income for South American banks remained fairly constant in the preceding three years, while fee income declined. The sharp year-on-year EP decline of 42 basis points in 2015 was mainly triggered by an increase of 30 basis points in risk costs. Operating costs also rose for the first time after a continued decrease since 2009. The range of EP is widening, as a result of both increasing values for top performers (because of greater net interest income) and decreasing values for bottom performers (owing to a reduction in net interest income).

Middle East and Africa. EP continued to rise at banks in the Middle East and Africa, even as net interest income remained nearly flat and trading income decreased. Slight reduc-

tions in both operating and risk costs in 2015 boosted EP by 5 basis points, to 67 basis points, nearly matching the 2009 level. The EP range has remained relatively stable since 2013, with even the bottom performers showing only slightly negative levels.

Outlook: Focusing on Resources

We expect that the global banking environment will continue to evolve differently by region. In the US, interest rates will rise, and growth will be moderate. In Europe, both interest rates and growth rates are likely to stay low. And in emerging markets, growth will continue. The best way to tackle this uneven playing field is to adopt a strategy that focuses on resources, rather than take an approach that is based purely on the top line.

As banks struggle to improve EP, increasing and shifting regulations will remain a central source of pressure on their costs and project portfolios. Banks have no control over the regulatory onslaught, but they can take a disciplined and strategic approach to implementing the new requirements.

NOTE

1. A bank's EP is calculated by subtracting refinancing and operating costs, loan loss provisions (LLPs), and capital charges (common equity multiplied by the cost of capital) from the bank's gross income. LLPs and capital charges, barometers of macroeconomic and regulatory conditions, together represent the risk costs incurred by banks.

REGULATION

AN ERA OF CONSTANT EVOLUTION

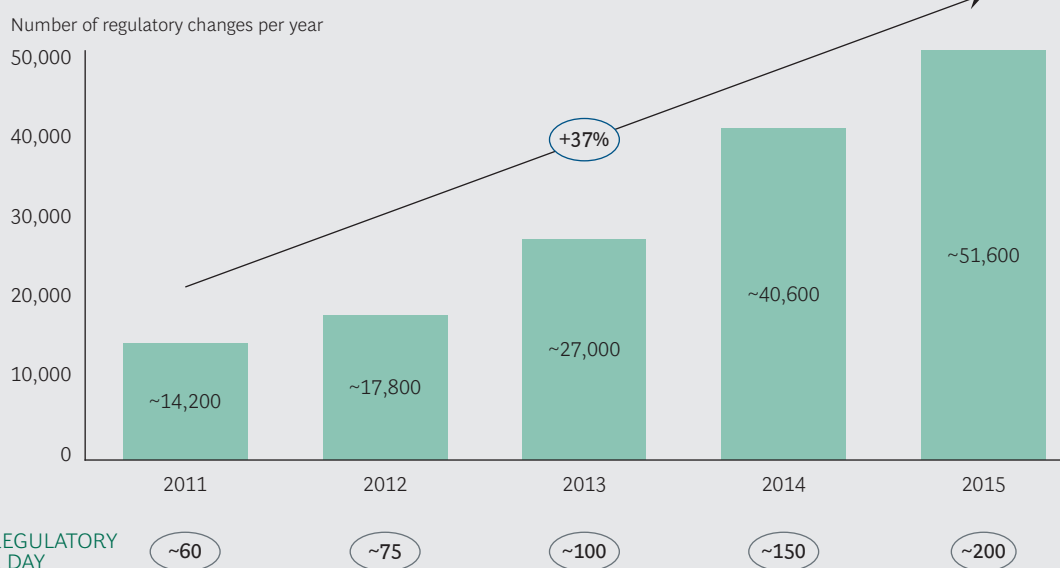
THE ERA OF CONSTANTLY evolving and increasing regulatory requirements persists. The number of individual regulatory changes that banks must track on a global scale has more than tripled since 2011, to an average of 200 revisions per day. In 2015 alone, their number, measured globally, rose more than 25%. (See Exhibit 3.)

We have identified three overarching themes in this evolution.

First, regulation must be considered a permanent rise in sea level—not just a flowing tide that will ebb or even a cresting tsunami that will recede. We expect this theme to hold despite recent political developments in the US,

EXHIBIT 3 | Banks Must Adapt to Greater Regulatory Changes, Which Have More Than Tripled over Four Years

GLOBAL REGULATIONS CONTINUE TO INCREASE



Sources: Thomson Reuters; BCG analysis.

Note: Regulatory change is defined broadly here to include any new local, national, or international policy, ruling, reform, action, law, ban, comment, announcement, publication, or speech that the compliance department of a bank would be expected to note and monitor.

which may lead to critical challenges to regulatory implementation. Many of regulators' top-priority reform packages are now in place. The regulatory burden on banks increasingly will consist of following guidance on technical implementation and responding to the findings of regulatory audits.

Second, actions by independent jurisdictions, rather than initiatives that are globally coordinated, will remain the source of most new and changing requirements that banks must comply with.

Third, the influence and effect of regulation on strategic and operational planning remain high—for example, regulation still consumes the largest share of bank project portfolios.

For all three reasons, regulatory tracking and compliance must remain high on every bank's agenda.

In our view, many of the major reforms proposed by regulators to address the most urgent, top-priority topics have largely been put in place as legislative initiatives, in accord with Level 1 of the four-level Lamfalussy approach to legislative frameworks adopted by the European Union (EU). Banks are already bracing for the ensuing flood of technical standards and delegated acts (Level 2), as well as for interpretation guidelines for implementing the reforms with detailed process, procedural, and definitional changes (Level 3). Level 4, the supervision and enforcement by regulators, is being developed in parallel with Level 2 legislation.

As the direct regulation of banks continues, nonbank subsidiaries will also begin to face increased scrutiny and regulation. Asset managers, in particular, should expect heightened risk management requirements focusing on activities and products that might pose risks of systemic failure. (See the sidebar "Asset Managers Face Rising Regulatory Scrutiny.")

To assess the current status and potential impact of regulation, we organized the global regulatory spectrum into three clusters: financial stability, prudent operations, and resolution.

Financial Stability

This is the most developed area of reform, though the details continue to evolve.

Capital is still the name of the game because pressure by investors and peer groups is driving capital requirements higher. Common Equity Tier 1 ratios above 12% seem to be a minimum goal. The Basel IV reform package, however, is adding both uncertainty and complexity to this environment. The uncertainty comes from the exact numerical value of risk-weighted asset (RWA) floors based on the standardized approaches, which—according to our experience working with leading banks—could impose noticeable upward pressure on RWAs. Complexity has increased because implementing the fundamental review of the trading book's (FRTB's) internal model approach (IMA)—in addition to the heightened interest rate risk requirements for the banking book—is a highly challenging task from the perspectives of modeling, data, and IT.

Many of the major reforms proposed by regulators have largely been put in place.

The leverage ratio is the second most important element of the capital game. The EU recently followed the Basel Committee's proposal for a 3% minimum leverage ratio. The US, Switzerland, and the UK have already set a stricter bar, which we believe will ultimately raise the minimum goals to 5% to 6%.

Stress testing will gain greater importance, from both a quantitative and a qualitative perspective. The latter perspective requires a governance framework that includes audit processes, scenario planning, and the use of conclusions for management decisions and bank steering.

Current regulations in the US—including the Comprehensive Capital Analysis and Review (CCAR) framework, with both quantitative and qualitative elements—are more advanced than the European framework and

ASSET MANAGERS FACE RISING REGULATORY SCRUTINY

Banks with asset management operations may soon experience a sense of regulatory déjà vu. Although global regulators focused their reform efforts on large banks and other systemically important financial institutions in the wake of the 2007–2008 financial crisis, they have since been increasing their scrutiny of asset managers—both independent and bank owned—looking for activities and products that might pose systemic risk.

Evolving proposals by regulators emphasize issues related to systemic failure and investor protection.

We believe that it is a matter of when—not whether—asset management activities will face rigorous regulatory scrutiny.

Indeed, asset managers themselves have started to formalize a collective view of risk management frameworks and best practices through industry forums such as the Global Association of Risk Professionals. (See *Global Asset Management 2016: Doubling Down on Data*, BCG report, July 2016.) Such efforts will assist the industry in preparing for further regulatory inquiry.

Emerging Proposals

The evolving proposals by regulators emphasize issues that are most closely related to systemic failure and investor protection, and they would require independent risk functions and ongoing risk governance.

EU regulatory frameworks—such as the Undertakings for Collective Investment in Transferable Securities (UCITS), the Alternative Investment Fund Managers Directive (AIFMD), and the Markets in

Financial Instruments Directive (MiFID)—are ahead of those in the US, where an initial set of three rules has been issued by the Securities and Exchange Commission (SEC), with more to come.

With basic risk management frameworks and governance now a norm, the three SEC rules, plus an additional proposal, focus on the key topics for mitigating systemic risk:

- **Liquidity Risk Management.** This requirement aims to reduce the likelihood that a fund would be unable to meet redemption obligations and thus would dilute the interests of its shareholders. It applies to open-end mutual funds and certain exchange-traded funds (ETFs).
- **Swing Pricing.** This rule creates an option for open-end funds (excluding money market funds and ETFs) to adjust their net asset values per share, thus effectively passing on the costs from purchase and redemption to the transacting shareholders. The tool serves to protect existing shareholders from dilution associated with shareholder purchases and redemptions.
- **Registration and Reporting Forms.** This measure mandates enhanced data reporting and additional disclosure of liquidity risk measures.
- **The Use of Derivatives.** Still a proposal, this regulation would restrict excessive fund leverage resulting from the use of complex derivatives. It would apply to all types of registered funds.

Additional proposals by the SEC, along with international recommendations by the Basel-based Financial Stability Board, cite the importance of measures such as liquidity stress testing, business continuity,

transition planning, anti-money-laundering, and proper controls for securities-lending activities.

In the US, mixed messages during the presidential campaign suggest that twists and turns lie ahead for US regulatory policy and postcrisis financial reform efforts.

Nevertheless, on balance, we believe that there is strong bipartisan consensus on the need to address market liquidity and leverage. These goals are embodied in the new SEC rules and the additional proposal described previously, which would require formal risk management of liquidity and derivatives, as well as extensive regulatory disclosure and reporting on individual funds.

Readiness Gaps

While asset managers, especially the larger and more complex organizations, have generally made progress in developing risk management frameworks, the level of readiness across the industry as a whole is still very low. The largest readiness gaps are in liquidity risk, leverage through the use of derivatives, stress testing, and reporting.

Given the expected regulatory changes, asset managers with SEC-regulated funds—both independent and bank owned—should act now to do the following:

- Assess the strategic impact of new and proposed risk management regulations on the operating model—overall and by business line.
- Perform a readiness check, identify missing capabilities, and develop a strategic roadmap for meeting new requirements and incorporating them into decision making.
- Develop a more formal and comprehensive risk management framework to

meet new and emerging regulatory requirements—including a state-of-the-art framework for enterprise risk, covering governance, processes, data, and IT and establishing an independent risk function.

- Establish appropriate organizational and technical capabilities for governance, people, processes, data, and technology and prepare the implementation of a comprehensive risk management framework.
- Develop effective challenge and oversight processes that allow fund boards to be both more informed and involved in risk management.

The most effective and proactive asset management firms are beginning to prepare for the regulatory changes of tomorrow. In doing so, they should leverage the experience of banks and other financial institutions with regard to previously implemented regulations in the wake of the financial crisis. Using stress-testing concepts in risk management, for example, would improve a firm's resilience in the face of severe events regardless of regulation. Consequently, best-in-class firms will invest to accommodate the emerging trends in asset management that affect investors well before regulators take action.

will become business as usual both for major US banks and for banks with significant operations in the US. In Europe, the focus is strongly on quantitative stress tests. Going forward, we expect stress testing in Europe to also include the qualitative perspective. In addition, stress testing in Europe will need to be adjusted according to the implications of the IFRS 9 implementation.

Market Risk. Banks with large trading books face sweeping changes as they adjust to the new minimum capital requirements defined by the FRTB. Regulators have stepped in to define the approach that banks must take, resulting in increased capital requirements. The revised rules raise the bar for the IMA that banks use to assess capital requirements,

as well as for the new standardized approach. Implementation poses particular challenges because of the complex cross-functional requirements on bank methodologies, front-office organization, and infrastructure and because implementation time is relatively tight: banks must complete internal and external validation and should target compliance by January 1, 2019. (See the sidebar “FRTB Revisions Pose Big Challenges for Trading Banks.”)

Meanwhile, as interest rate risk in the banking book (IRRBB) becomes more strongly formalized under Pillar 2 of the Basel framework, earnings measurements in risk considerations have become almost as important as economic value metrics. As a result, earnings have

FRTB REVISIONS POSE BIG CHALLENGES FOR TRADING BANKS

Large, internationally active banks with sizable trading books face sweeping changes as they adjust to the new generation of minimum capital requirements for market risk, also known as the fundamental review of the trading book (FRTB). The new standards, finalized by the Basel Committee on Banking Supervision (BCBS) in January 2016, strengthen the Basel 2.5 reforms, which aim to eliminate the undercapitalization of trading book exposures that emerged during the financial crisis.

The new proposals raise the bar for both the internal model approach (IMA) used by banks to assess capital requirements and the new standardized approach. Principal changes for the IMA are the shift from a calculation of value at risk to one of expected shortfall for the stress periods and the use of specific liquidity horizons. In addition, a default risk charge needs to be identified and used to replace the old incremental risk charge. BCG’s proprietary model for calculating the default risk charge reveals that the advantage of applying the IMA, as opposed to the standardized approach, depends significantly on the composition of the underlying

ing portfolio (such as the number of issuers, correlation structure, rating distribution, and underlying instruments).

A completely new requirement now also covers the risk from “nonmodelable” risk factors (NMRFs). The new standardized approach requires enhanced scenarios covering financial shocks, as well as a default risk charge for securitizations, incorporating the risk from correlation trading portfolios. Finally, there will also be a residual risk add-on in the standardized approach to cover the impact of any residual risks.

Taken together, the FRTB reforms will require successful banks to optimize their business models with respect to the trading book. Based on the findings of a BCG survey of 24 banks in eight countries, the key challenges of FRTB are the magnitude of the capital impact, the ability to successfully implement the IMA on a desk level, and the overall project risk of the FRTB implementation.

The expected increase in risk-weighted assets as a result of the FRTB is 120% for the standardized approach and 40% for the

now also become a risk topic, expanding beyond the previous focus on finance.

The IRRBB will impose three sets of changes.

First, governance needs to be enhanced, and the appropriate committees and stakeholders must be included. A risk appetite for IRRBB needs to be defined and its inclusion into the economic capital framework ensured. Furthermore, IRRBB should be introduced as a standalone pillar in the bank's Internal Capital Adequacy Assessment Process.

Second, there are modeling challenges, which concern all material positions in the banking book. Depending on the geographic region and the legal system involved, client behavior

may have a significant economic impact on assets (such as mortgages) or liabilities (such as retail deposits).

Third, there will be implications for data and IT. More detailed data will be required for modeling, and IT systems may need to be revamped in order to improve net interest income simulation and optimization capabilities.

An IRRBB benchmarking conducted by BCG in 2016 found that the key success factors in achieving net interest margin stability were the strict application of an earnings-at-risk measure over a multiyear horizon, board level governance, limit setting, risk appetite definition, granular modeling of client behavior,

IMA. This significant increase, together with the new rules on desk structure and the boundaries between banking book and trading book, forces banks to redesign their portfolios and business mix.

Implementation of the IMA on a desk level poses significant challenges with regard to P&L attribution and NMRFs, and banks have decided to strongly upgrade their IT infrastructure, including a move to new technologies, such as grid computing, and investments in data reconciliation improvements.

Moreover, because FRTB imposes complex cross-functional requirements on methodologies, front-office organization, and infrastructure, there is significant project risk for the FRTB implementation in the relatively short time period that remains. Implementation costs range from €10 million to more than €100 million.

As a result, 40% of the survey participants expect to change their mix of businesses and portfolios—for example, by reducing securities and credit risk exposure or by reducing complex and illiquid positions associated with long-dated exotic options.

To succeed, banks will need to optimize their business models. We see the following main tools for doing so:

- **Business Mix.** Certain portfolios will need to be shifted from trading books to investment books, such as the liquidity buffer.
- **Products.** Exotic product features will need to be reviewed, and the potential impact from long liquidity horizons and NMRFs must be reduced, such as for foreign currency and credit products, complex products with long duration, and illiquid products.
- **Pricing.** Risk will now need to be priced. That amount should include the full impact of the capital costs in new deals based on product-specific features and will require an effective internal transfer-pricing system.
- **Hedging.** Banks will need to shift from macrohedges to microhedges and reduce gamma short positions, which could be vulnerable to impact from large stresses.

and the definition of a wide set of scenarios for stress test purposes.

Credit Risk. The most recent discussions of the Basel Committee on Banking Supervision (BCBS) have led to a consensus that the standardized approach for credit risk should be adjusted to increase its sensitivity. For the internal-ratings-based approach, certain parameters will now be determined by the regulator (“input floors”). However, the extent of restriction on the use of capital requirements from internal models (“output floors”) is still an open question.

Operational Risk. Given the magnitude of operational-risk breaches (such as anti-money-laundering incidents), regulators now intend to focus on tail risks, which have a low probability of occurring but can produce a high impact if they do occur. One possible approach will be to recast the current treatment of certain operational risks as outliers by replacing the model-based approach with a more standardized approach.

Tail risks, especially those that result from lawsuits and other conduct-based incidents, are subject to detailed assessments during regulatory stress tests.

Prudent Operations

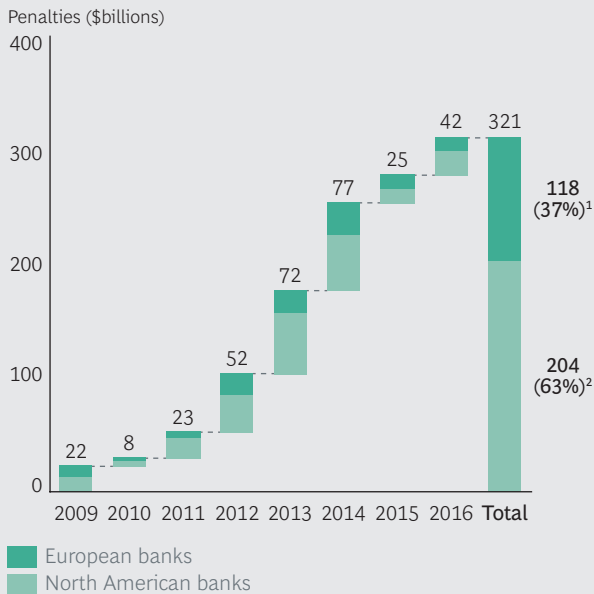
Strict regulatory enforcement has now been in place for several years, with cumulative financial penalties of about \$321 billion assessed since the 2007–2008 financial crisis through the end of 2016. (See Exhibit 4.)

About \$42 billion in fines were assessed in 2016 alone, levied on the basis of past behavior. While postcrisis regulatory fines and penalties appear to have stabilized at a lower level in 2015, with US regulators remaining the most active, we expect fines and penalties by regulators in Europe and Asia to rise in coming years.

As conduct-based regulations evolve, fines and penalties, along with related legal and litigation expenses, will remain a cost of doing

EXHIBIT 4 | The Penalties for Noncompliance by Banks Have Escalated, Mostly Imposed by US Regulators

PENALTIES PAID BY BANKS, BY REGION



PENALTY RECIPIENTS



Sources: Annual reports; press reports; BCG analysis.

Note: The sample covers the 50 largest European and US banks. Data through 2015 includes only the penalties, fines, and settlements that surpass \$50 million; data since 2015 includes only the penalties, fines, and settlements that surpass \$20 million. Values may not add up to the totals shown because of rounding.

¹56% of these costs stem from US regulators’ legal claims.

²85% of these costs stem from US regulators’ legal claims.

business. Managing these costs will continue to be a major task for banks. They will have to create a strong non-financial-risk framework around the first, second, and third lines of defense—business units, independent risk function, and internal audit—to avoid continued fallout from past behavior. We expect those costs to diminish as banks strengthen their compliance functions and overall risk management acumen.

As compliance functions evolve, the critical challenge for banks will be to establish central governance with an effective compliance operating model, based on the creation of a global functional lead. Strong central capabilities will be needed to ensure compliance at branches and, especially, subsidiaries. Debate continues on the merits of shifting from a rule-focused compliance approach—based on definitions of financial crime and of appropriate market and customer conduct—to an integrity-based approach that chief compliance officers would be expected to adopt.

High-level compliance regulations with near-term relevance include consumer protection regulations from the Markets in Financial Instruments Directive II (MiFID II) and the Markets in Financial Investments Regulation, which carry a revised implementation deadline of January 3, 2018. We believe that the industry's readiness for MiFID II is still low, and there is no showcase example of full implementation yet.

Moreover, conduct risk and the prevention of financial crime remain high on regulators' agendas. Know-your-customer requirements and transaction monitoring are the focus of efforts to prevent and penalize future episodes of misconduct. In the UK, conduct standards for senior management were spelled out in July 2016, and in Hong Kong, the Securities and Futures Commission announced plans in December 2016 to enhance its regime for managers in charge. In other jurisdictions, regulators are changing the yardstick for appropriate business practice and management decisions from "lawfulness" to "legitimacy." This opens the door to a new dimension of management accountability.

The principles regarding effective risk data aggregation and reporting established by the BCBS—particularly regulation 239—have already been implemented by global systemically important financial institutions (SIFIs) and will need to be implemented by local SIFIs according to their local timelines.

Resolution

In relative terms, resolution continues to remain the least developed, and most pressing, area of reform. It would require banks to establish resolution plans in case of failure in order to protect banking functions that are critical to the economy and to avoid the need for future taxpayer-funded bailouts.

There is still no uniform agreement about how to unwind banks and what preparatory structural measures might be needed to do so. However, some potentially significant contributions to bank resolution are emerging from measures already implemented. These include both quantitative and structural adjustments and changes. Quantitative measures include increasing liquid assets, ensuring sufficient debt for bail-ins, and reducing balance sheet size. Structural measures include implementing nonoperating holding structures at the group or intermediate level within a jurisdiction; reducing the complexity of legal entities; protecting or insulating from bank failure critical economic functions, which are often related to home markets; and creating independent entities to provide services.

Debate will continue on who should—and who should not—be permitted to invest, over the long term, in "bail-in-able" debt, to prevent domino effect failure within banks and other important intermediaries and to avoid a consequent impact on retail savings.

An axe now hangs over the heads of the banks that remain unprepared to take action. If regulators respond by imposing a deadline, laggards may face the competitive disadvantage of a hasty, last-minute restructuring. Regulators already have the power to enforce structural measures, such as changes to the organization of legal entities, and to restrict existing or planned business activities.

AN AGENDA FOR STAYING THE COURSE IN GLOBAL BANKING

MANAGING REGULATORY CHANGE WILL remain at the top of bank risk and steering agendas for the foreseeable future. Defining an efficient interaction mode between banks and regulators will be a critical task. In an era of rising regulatory seas, this focus on change management is mandatory, not optional. It needs to cover all three relevant areas of regulatory change: financial stability, prudent operations, and resolution. To succeed, banks must master two additional challenges that will allow them to stay the course using a strategy that builds the foundation of increased EP while achieving progressively tighter and more efficient management of resources and costs.

The first challenge is for the bank steering function to become more cost-efficient. Methods for doing so include adjusting the organizational setup and operating model and optimizing the powerful potential of new technologies. Future risk and steering functions might be designed on a more functional basis, establishing competence centers for key capabilities such as modeling, analytics, and

reporting. The introduction of more cost-efficient processes will require adopting technical tools and capabilities, such as advanced digital workflows.

Fintech and regtech startups are rapidly developing innovative capabilities and solutions that can be relevant to bank steering. Their offerings are varied and can include more flexible IT infrastructures based on advanced analytics and big data, as well as on improvements in process efficiency and automation.

The second challenge is for bank risk and steering functions to develop closer collaboration and more integrated management of the bank's P&L and balance sheet. Banks must not forget that these functions are ultimately responsible for optimizing the scarce financial resources of capital, liquidity, and funding.

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NOTE TO THE READER

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