



Creating a world-class central bank

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Central Bank network

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Best of the best

Central banks must evolve to keep pace with economic, technological and marketplace developments. Nowhere is this truer than in the world's high-growth countries, which face a race against time to modernize as local economies expand rapidly.

Central banks are crucial to a nation's economic well-being, tasked with developing and implementing policy within its mandate, including monetary policy, currency and funds management. Many also regulate and supervise the commercial banking system and stand ready to act as a lender of last resort — a scenario all too familiar during the latest global financial crisis.

Although the range of responsibilities of central banks can differ widely between countries, all share a common goal of maintaining the highest possible standards, to preserve the stability of the economy and retain public trust.

In high-growth markets, central banks also face a race against time to modernize in order to keep pace with the rapid expansion of their

national economies and the increasing sophistication of their financial services sectors.

KPMG's Central Bank network engages specialists across geographies to leverage network capability and actively service central banks to help them formulate and implement strategies and improve performance.

Key priorities for central banks

- 1** Enhancing the sustainability of the financial system
- 2** Business continuity management and resilience to operational disruption
- 3** Transformation — building a high-performance organization
- 4** Stepping up governance, risk management and internal controls
- 5** Regulatory convergence and harmonization of banking supervision
- 6** Supervising stability and regulatory compliance
- 7** Overseeing payment systems
- 8** Implementing International Financial Reporting Standards (IFRS)
- 9** Cyber security and digital disruption implications
- 10** Effective financial oversight — accountability and transparency



Case studies

Implementing major change

Following the global financial crisis, the central bank of a European nation was asked to deliver a broader mandate with more vigorous regulation. Professionals from the KPMG Central Bank network helped the central bank prioritize its objectives and bring in new technology and business processes, along with appropriate governance. With this assistance, the bank revamped its technology function, introduced online regulatory returns and updated security policies and set up a new, outsourced credit register. The KPMG Central Bank network's role in stress testing and loan assessment was vital in assessing commercial banks' capital requirements and collateral. In addition to improving its regulatory capabilities, the central bank has saved an estimated 10 million euros (EUR) in annual operating costs.

Managing costs and communicating with stakeholders

Central banks are typically under pressure to account to the government and the public for the money they spend on items such as staff, buildings and information systems. One of the world's major central banks regularly prepares a report on its expenses and investments, breaking down costs and analyzing 'actual' against 'plan'. A team from KPMG's Central Bank network analyzed the report and the underlying management accounting processes and systems, providing the central bank with recommendations to further enhance the reporting and, at the same time, giving assurance to stakeholders on the relevance of the report.

1

Enhancing the sustainability of the financial system

Increasingly, central bank governors are being asked to explain their contributions to advancing the sustainable development of their economies.

Financial systems and individual financial institutions are increasingly impacted by new and more disruptive, less predictive environmental and social challenges, such as climate change, aging populations, large-scale involuntary migration, extreme weather events and resource scarcity. All these challenges (and society's responses to them) present financial risks which impact upon a central bank's mission and core objectives. For example, climate change can affect the financial stability, resilience and longer-term prosperity of countries.

Like other organizations, central banks need to adapt to this changing risk landscape. Effective integration of these environmental and social risk factors in the core duties will likely become a critical capability in the future for central banks. Central banks must be able to understand and assess the scope and size of the risks that arise to financial stability from societal challenges (e.g. climate change) and the financial institutions which they supervise. More longer-term, forward-looking and judgment-based supervision is needed to examine these financial risks. In addition, they need to be able to determine effective strategies to make the financial system more resilient to any of these societal transitions and help the system to adjust itself efficiently, for example, by implementing policies to scale up

green finance. Central banks also need clear reporting frameworks to explain to society, and other key stakeholders, their contributions to improving the sustainability of the financial system and national economy.

Not all central banks are taking action yet to adapt their scope of responsibilities, strategies, policies and organizational processes to this new risk landscape. However, some central banks have already started with integrating environmental and social risk factors in their core duties. For example, in 2017, the Bank of England formulated its strategic response to climate change. The Dutch Central Bank is also active in this field. In 2016, it established The Sustainable Finance Platform to promote and encourage a dialogue on sustainable finance in the Dutch financial sector. In addition, it is conducting a thematic review into climate risk within its financial institutions. In 2017, the Central Bank of Brazil issued guidelines of integrated risk management, including environmental risk and, in 2016, the Central Bank of Russia conducted a review on green bonds.

How KPMG's Central Bank network can help

KPMG Central Bank network professionals work with central banks of varying degrees of size and sophistication to advance the

integration of environmental and social factors in the core duties and organizational processes of the bank, including:

- quantifying and assessing the financial risks which can arise from climate change and other environmental and social issues
- benchmarking of sustainability performance against comparable institutions
- supporting with determining effective strategies and policy measures to mitigate financial risks from climate change and other environmental and social issues
- integration of environmental and social risk factors in core duties, organizational processes and systems and governance structures
- providing up-to date knowledge and understanding of regulatory changes around the world in the field of sustainability
- supporting with improving the central bank's sustainability performance of own organization, such as sustainable procurement and carbon footprint of offices of the bank
- improving disclosure effectiveness of sustainability performance of the bank towards society and other key stakeholders.



Case studies

Measuring and managing climate-related financial risks

KPMG's Central Bank network professionals support a major European central bank and the financial institutions which it supervises, with measuring and managing climate-related financial risks. The KPMG Central Bank network team supports with identifying and/or developing tools for measuring and managing climate-related financial risks and assessing current approaches and analyzing potential gaps.

Improving the environmental performance of the bank's operations

A team of professionals from the KPMG Central Bank network supported a central bank in a key developed economy with improving the environmental performance of its own operations. The KPMG team helped with the development of a new environmental policy for the bank, including an overarching vision and ambition. In addition, it supported the design of a new governance structure for environmental performance management and with determining concrete measures to improve the environmental performance of the organization.

2

Business continuity management and resilience to operational disruption

Central banks and financial institutions have a shared interest in promoting the resilience of the financial system to major operational disruptions.

Business continuity is a clear priority for the financial industry. Recent acts of terrorism, cyber attacks and various widespread natural disasters and pandemic diseases, along with the risk of energy and telecommunications outages and information technologies failures, have served to heighten that priority by underlining the substantial risk of major operational disruptions to the financial system.

Disruption of central banks processes could undermine trust and confidence in the financial system stability from the public, national and international commercial banks, the government and international financial authorities with very adverse economic and political consequences.

Business continuity management, a significant component of operational risk management, is a whole-of-business approach that includes policies, standards and procedures for ensuring that mission critical operations can be maintained or recovered in a timely fashion in the event of a disruption. Its purpose is to minimize the operational, financial, legal, reputational and other material consequences arising from a disruption by promoting the resilience of the organization to potential threats that could cause major operational disruptions.

In 2006, the Basel Committee on Banking Supervision published the high-level business continuity principles.

Principle 1 states that sound business continuity management applies to all financial authorities and financial industry participants and that the ultimate responsibility for business continuity management rests with an organization's board of directors and senior management.

Since then, central banks have been issuing regulatory frameworks for business continuity management in their role of supervisory authority over financial institutions and have been implementing their own business continuity management programs, often based on international business continuity management standards such as ISO 22301 and industry best practices.

In mature markets, the financial authorities have been promoting financial industry crisis management exercises and testing the financial system resilience to several disruptions scenarios (i.e. cyber attack, adverse weather, avian flu).

How KPMG's Central Bank network can help

The KPMG Central Bank network has advised financial institutions around the globe in the implementation of their business continuity management programs. With a strong track record in delivering effective business continuity management, the KPMG Central Bank network can help central banks with:

- defining the business continuity policy and processes
- analyzing the risk appetite and determining the impact scale for disruptive events
- performing a business impact analysis to identify critical processes and their recovery time objectives
- carrying out a risk assessment to determine the disruptive risks to which the bank is more exposed and that need treatment
- defining a business continuity management strategy with preventive solutions to reduce risk exposure and recovery solutions to recover critical functions within the recovery time objectives
- developing crisis management, business recovery and IT disaster recovery plans
- facilitating crisis management, business recovery and IT disaster recovery tests and exercises
- carrying out internal audits to the BCM process, including ISO 22301 compliance assessments and to the IT disaster recovery solutions
- ensuring the continuous improvement of the BCM process.



Case study

Implementing a Business Continuity Management System

KPMG's Central Bank network professionals assisted a central bank to implement a Business Continuity Management System (BCMS) using the ISO 22301 Standard, to take the lead in compliance with business continuity management international best practices and to ensure the future maintenance and continual improvement of this function in the bank.

The implementation of the BCMS was conducted by the Risk Management Division with the support of the KPMG Central Bank network. The BCMS implementation program involved the whole organization — not only the business divisions initially in scope — payments system, assets markets, international reserves and operations — but also support divisions, such as accounting, human resources, organization and processes, institutional communication, infrastructure and security, information technology and internal audit. The program was strongly sponsored by the board of directors, represented by the Chief Risk Officer in all steering committees and communication with all interested parties was key to ensure the program success.

The team from the KPMG Central Bank network analyzed the context of the central bank to understand its processes, organization, facilities, information systems, major threats and risk appetite. Then, the team supported the bank in the definition of the BC Policy, BC Governance Model and BCMS processes.

The team of KPMG Central Bank network professionals conducted a business impact analysis (BIA) that allowed the identification of the client's critical business processes and their recovery time objectives (RTO). The firm worked with the bank to identify the resources (people, information systems and facilities) required to recover critical business processes in minimum service levels. Also, the team conducted a risk assessment to understand the disruptive risks to which the bank is more exposed and that need treatment. As a result, the KPMG Central Bank network team defined the business continuity strategy with preventive solutions to reduce risk exposure and recovery solutions to recover critical functions within the recovery time objectives.

While the bank implemented the preventive and recovery solutions, the KPMG Central Bank network team defined the crisis management plan, business recovery plans and IT disaster recovery plans together with the business and support divisions of the bank.

The next step will be to assist in implementing the crisis management function, business recovery exercises and IT disaster recovery tests to ensure that the teams understand their roles in case of a disruption and the effectiveness of the recovery solutions and the BCMS performance evaluation, defining key performance indicators, training the internal audit team to perform BCMS audits and preparing the first management BCMS review with the board of directors. The final step will be to develop a BCMS maintenance plan with corrective and improvement actions for the next cycle.

3

Transformation — building a high-performance organization

Increasing quality and efficiency with a view to becoming a high-performance and innovative central bank

Central banks need to stay ahead of the financial ecosystems in their countries by embracing the dynamics of new technologies and current working trends. To achieve its strategic objective, a central bank needs to ensure it is fit for purpose and has the higher motivation to move forward.

In order to achieve its higher purpose of a motivated organization, the central bank needs to place the transition of the institution as a priority program. A key objective is to build a human resource framework that has the leadership skills to follow through the strategic values of the bank.

Transforming a central bank is always a challenge, as it traditionally has a

long-established work culture (some over many decades) impacting its employees. Any transformation and change requires tailored change management initiatives.

How KPMG's Central Bank network can help

The KPMG Central Bank network provides the understanding and insight to help central banks effectively navigate the transformation journey and help avoid the major causes of failure.

Most transformations are relentlessly complex whether they involve rolling out an incubated business, undertaking a major operating model upgrade, or implementing major organizational reform.

To help clients predict and avoid these pitfalls, the KPMG Central Bank network has a core set of project managers and directors who work with all of KPMG's service networks to assemble the right team, the right approach and the right delivery capability for any given transformational project or program, such as:

- Conduct macro and micro organization design.
- Develop job grading and remuneration framework.
- Prepare Job Description, and Workforce Analysis.
- Prepare change strategy & plan.



Case study

An organization fit-for-purpose

A central bank in a high growth market embarked on a transformation program to increase its quality and efficiency and to be the most innovative central bank in the region.

A team of professionals from the KPMG Central Bank network assisted the bank to validate its strategy and translated that into an organization design blueprint, which includes the enhancement of their operating model and recommendations for job profile, job level and FTE analysis to ensure the right people are at the right place in the right number.

The team also helped the bank to review the existing job grading and remuneration system and enhance it to ensure the criteria and weightings match the needs of the bank and that it is fit for purpose to support the execution of the bank's strategy of transition to a high-performing culture.

The central bank's governance framework was also enhanced by the KPMG Central Bank network team. The work included decision-making authority and reporting lines to ensure the governance framework facilitates the implementation of a robust review mechanism and promotes transparency in decision-making.

4

Stepping up governance, risk management and internal controls

Good governance is not just a box-ticking exercise for central banks; it underpins the integrity and stability of a country's financial system.

Eager to avoid a repeat of the financial meltdown, the financial sector as a whole has had a big push on governance in recent years. As the standard bearers of quality, central banks need to visibly raise the bar in terms of independence, expertise and professionalism, not just as an example to other institutions, but to help ensure the smooth running of the wider economy. In addition to robust policies and systems, the governor and the executive and non-executive board members should possess exceptional skills and independence in order to manage and oversee the bank's activities.

Like any organization, central banks have to manage performance, approve budgets, use resources efficiently and build strong teams with the right capabilities. They need clear reporting frameworks and

benchmarking of performance against comparable institutions.

The public and other stakeholders expect full accountability and transparency to uphold political independence and demonstrate that central bank policies are contributing to lasting economic growth.

Not all central banks are yet equipped to meet such demands, while others are undergoing fundamental changes, such as increasing/decreasing their scope of responsibilities and introducing new organizational processes. This may call for new organizational design and policies, as well as training and recruitment to bring in new skills.

How KPMG's Central Bank network can help

KPMG's Central Bank network professionals work with central banks of varying degrees of size and sophistication to advance governance, risk management and overall operating standards, including:

- rethinking the organizational structure, including core processes and systems for banking activities and reserves management
- refining the operation of the audit committee, executive management or risk management roles
- assessing the quality of internal audit
- enhancing financial reporting processes and associated internal controls.



Case studies

Rehabilitating the national banking system

In a substantial exercise to value assets and liabilities, a KPMG Central Bank network team assisted the central bank and two commercial banks in the country to recapitalize. The KPMG Central Bank network mobilized a cross-border team of specialists in valuations, real estate, insurance and accounting, whose work has underpinned discussions between international creditors, the Ministry of Finance and the central bank. The subsequent full recapitalization (via the conversion of uninsured deposits into shares in the commercial banks) has formed a vital part of the restructuring and rehabilitation of the national banking system.

Enhancing the risk management system

The risks faced by central banks can be significantly different to those faced by commercial banks. Several years ago, one of the world's major central banks decided to apply certain risk management requirements, which are obligatory for commercial banks in its jurisdiction, to its own internal processes. The KPMG Central Bank network team analyzed the application and implementation of those requirements. This resulted in recommendations to the board on updating and enhancing the internal requirements and on making the internal processes more effective in practice.

5

Regulatory convergence and harmonization of banking supervision

Regulatory convergence and the harmonization of banking supervision are key elements in building the European banking union.

In June 2012, member states of the European Union agreed to create a European banking union to ensure strong supervision of EU banks and address major weaknesses of the banking sector that had been uncovered by the financial crisis. The European Central Bank received wide-ranging competencies for the supervision of all 6,000 banks in the euro area and, in November 2014, began directly supervising the top 129 banks under the framework of the Single Supervisory Mechanism (SSM). Since then, the ECB's aims have been to establish a common approach to day-to-day supervision, take harmonized supervisory actions and corrective measures and ensure the consistent application of regulations and supervisory policies.

As the European banking sector is strongly fragmented in comparison with other jurisdictions such as the US, the ECB uses tools and instruments in both a consistent and flexible manner to achieve its objectives and to take into account the heterogeneity of the European banking sector in terms of size, business model and juridical framework. Thus, central banks from non-EU-countries may learn much from the ECB's code of conduct in banking supervision and how the ECB works toward regulatory convergence within the EU. The ECB's tools and instruments include the following:

- **Supervisory review and evaluation process (SREP):** The ECB performs the SREP, based on EBA guidance and detailed in an SSM manual, as a vital part of their supervisory efforts. Directly supervised banks are reviewed annually with regard to their business model, governance and controls, risks to capital and liquidity buffers. The ECB uses the results from the SREP to set bank-specific capital requirements (beyond pillar 1 requirements).
- **Stock-takes, thematic and targeted reviews:** The ECB regularly conducts stock-take exercises and reviews to gain an overview on practices in the banking sector, such as in the areas of non-performing loans (stock-take), BCBS 239/IT outsourcing (thematic review) or internal models (targeted review on internal models, TRIM).
- **Joint supervisory teams:** To allow for flexibility in judgment, banks directly supervised by the ECB are covered by an individual joint supervisory team (JST). JSTs differ in terms of size and background, are supported by a comprehensive range of support functions (such as internal models, crisis management and risk analysis) and benefit from close collaboration between the ECB and such institutions as the National Competent Authorities (NCAs) and internal resolution teams from the Single Resolution Board (SRB).
- **On-site visits:** For 2016, the ECB approved and staffed 185 on-site inspections (OSIs) in close cooperation with the NCAs, which provided 90 percent of the heads of mission. A range of supporting tools (such as Blind Spot Tracker, Market Place) were used to enhance efficiency of the OSIs and to ensure the timely treatment of findings. The ECB and NCAs have often resorted to external support for such OSIs.
- **Supervisory priorities:** In its third year of operation, the ECB uses a focused approach to identify key areas of future supervisory activities, involving the NCAs, JSTs and the ECB's divisions for macro and micro-prudential analyses, as well as reports from various international bodies. These priorities are closely linked to a stringent project structure as they involve a number of separate supervisory initiatives which, in some cases, are implemented over more than one year (e.g. for non-performing loans, BCBS 239 or TRIM). Since the start of its operations, the priorities in banking supervision have reflected the ECB's commitment to internationally agreed standards.

— **Supervisory colleges and training services:**

To ensure close collaboration between the ECB and, for example, the NCAs, the JSTs and the SRB and also to reflect current developments in risk, IT and accounting in the ECB's supervisory assessments, the ECB puts particular emphasis on supervisory colleges (e.g. for recovery and resolution) and internal training (e.g. for stress tests or IFRS 9).

How KPMG's Central Bank network can help

The KPMG Central Bank network has outstanding experience in advising banks and central banks within the European banking union. KPMG's ECB

Office in Frankfurt, Regulatory Center of Excellence in London and EU Office in Brussels closely monitor any regulatory initiatives and developments and coordinate KPMG's European activities with banks and supervisors under the SSM. The KPMG Central Bank network can help clients with:

- expert advice on topics related to the ECB's supervisory priorities with the aim of ensuring that market best practices and standards are applied
- expert advice, insights and benchmarks on Pillar 1 and Pillar 2 (SREP) capital requirements
- organizing or supporting stock-takes, thematic reviews or targeted

reviews to improve regulatory convergence

- supervisory colleges or regular training sessions on key topics in risk, IT and accounting
- conducting and/or documenting of dry-run exercises of recovery or resolution situations
- project management of multi-year projects and initiatives
- advising central banks on implementing or refining review processes of the banks under their supervision, leveraging the knowledge gained by supporting banks in their comprehensive assessments.



Case study

Supporting European banks in the comprehensive assessment

In 2014, the ECB conducted a comprehensive assessment of all directly supervised banks. In this assessment, banks had to partake in an asset quality review (AQR) and in the 2014 EBA stress test.

Professionals from the KPMG Central Bank network either advised on the AQR or was the auditor of 93 out of the 128 directly supervised banks in the banking union throughout the 2014 comprehensive assessment.

KPMG Central Bank network professionals also supported a large number of banks in their preparation for EBA's and ECB's stress tests (e.g. as part of the comprehensive assessment).

By advising banks in the comprehensive assessment, the KPMG professionals from the Central Bank network were able to help ensure that banks were able to comply with the goals and requirements of the ECB in order to achieve an effective comprehensive assessment, minimizing frictions between the ECB and the participating banks. The KPMG Central Bank network professionals were also able to gather extensive experience and build a deep understanding of the comprehensive assessment.

6

Supervising stability and regulatory compliance

Central banks have been at the heart of discussions and new rules on regulating and supervising commercial banks.

Commercial banks face a huge increase in regulatory demands for liquidity, capital requirements, recovery and resolution planning and customer-centric operations. Not surprisingly, many struggle to cope with the organizational and cultural change and the associated reporting and data aggregation requirements.

Central banks often have regulatory and supervisory authority over financial institutions to ensure they are safe and operating in a stable financial environment, to retain the trust of customers and the wider financial markets.

Central banks may assess which banks (if any) pose a risk to financial stability and work more closely with these institutions. They also coordinate with

central banks and financial supervisors of other countries when managing international financial crises and overseeing multinational groups.

Regulatory oversight has taken on new urgency in the wake of the global financial downturn and central banks want to be confident that they can perform this task competently, spot systemic or institutional weaknesses and reassure financial markets.

The recent crisis demonstrated starkly the need for stability in the economy, the currency, the financial sector and within individual financial institutions. Through monetary policy and macro- and micro-supervision, central banks can steady the economic conditions. To achieve this, they may also have to redesign their internal processes and systems.

How KPMG's Central Bank network can help

KPMG's outstanding Regulatory Centers of Excellence offer telling insights into the implications of regulatory change and the direction of developments around the world, including Basel III, Solvency II, EU initiatives and the Dodd-Frank Act. This expertise is invaluable in:

- improving regulatory supervision, to ensure that commercial banks adapt their structure, conduct and culture, data and reporting and risk governance
- providing up-to-date knowledge and understanding of regulatory changes around the world.



Case study

Getting up to speed with Basel

Basel compliance is a critical objective for all commercial banks and an emerging markets central bank asked the KPMG Central Bank network team to carry out a comprehensive training program for all the country's banks. KPMG's Central Bank network professionals prepared and delivered country-specific training, covering necessary reforms, risk management and regulatory reports. Through a mix of classroom and breakaway sessions, the participants helped to provide far greater confidence in the banks' ability to meet the new standards.

7 Overseeing payment systems

A national economy could be severely damaged if key processes, such as money issuance and central payments systems, fail to run smoothly.

Payments form the heart of the banking industry and contribute to an efficient means of exchanging goods and services. Any weaknesses can impact the stability of the national economy and reduce confidence in the overall financial system. A range of stakeholders are involved, including retail banks, major corporations and payment schemes. Strategic retail and wholesale payment infrastructures must adhere to recognized standards, with payments increasingly made in real-time. In addition to the national payment network, some central banks also oversee commercial banks' payment systems, although the level of oversight varies from country to country.

The flurry of new payment systems is taxing the abilities of even the most sophisticated central bankers, who must keep on top of a continual pipeline of innovations, such as mobile phone-based payments (e.g. M-Pesa), peer-to-peer lending (e.g. Zopa) and digital currencies (e.g. Bitcoin).

How KPMG's Central Bank network can help

The KPMG Central Bank network has worked across global, regional and local markets to develop an understanding of the complexity of the payments industry. KPMG's Central Bank network has advised a number of central banks

on their payments systems, with expertise in people and processes and, crucially, the ability to come up with sound technical solutions. With a strong track record in delivering real-time gross settlement (RTGS) systems solutions, the KPMG Central Bank network can help clients with:

- strategic advice and support, as well as business process reengineering and information technology (IT) solutions for new payment systems
- workshops and training on payment systems.



Case study

A new era in payments

KPMG in the UK supported the UK banking industry through the successful launch of the UK Faster Payments Service, putting it at the forefront of the world's financial sectors. The biggest payments change in over 2 decades involved a huge, industry-wide exercise requiring complex changes to the banks' systems. Professionals from KPMG's Central Bank network were contracted by the Association for Payments Clearing Services (APACS) and worked with 13 major banks, an infrastructure provider and payments scheme operator — with the Bank of England as an important stakeholder. The KPMG Central Bank network professionals brought transparency, clarity and discipline to the program, coordinating essential industry testing of end-to-end payments and ensuring participants were ready to process the high volumes of payments expected to go through the system. Their efforts made a significant impact in meeting the regulatory deadline.

8

Implementing International Financial Reporting Standards (IFRS)

The harmonization of financial reporting across the globe is already a reality for most countries — following or converging to International Financial Reporting Standards (IFRS).

The convergence of central banks has been much slower, as illustrated in the accompanying diagrams. The primary reason is that IFRS have been developed with the main objective of responding to the necessities of capital markets and investors. This does not perfectly match the requirements of central banks, due to some specific reporting challenges of IFRS such as:

- Technical accounting issues:
 - foreign exchange revaluation
 - unrealized gains/losses and fair value measurement
 - gold accounting and reporting
 - cost of production of banknotes and issue of banknotes
 - special economic/financial assistance programs
 - provisions and pension liabilities.
- Disclosures requirements, namely:
 - IFRS 7 and cash flow statements
 - significant management estimates and uncertainties
 - related party disclosures.
- Consistency with the central bank law and distribution of realized/unrealized gains
- Independence of the central bank

How KPMG's Central Bank network can help

KPMG's Central Bank network specialists have extensive experience in assisting central banks world-wide in transitioning to IFRS. KPMG's Central Bank network professionals have a unique blend of skills and long-standing experience in IFRS, the Eurosystem Accounting Guidelines and other recognized standards. Our experience enables us to recommend solutions for virtually any challenges that an IFRS conversion project may bring to a central bank.

An IFRS conversion project encompasses several components and perspectives:

- diagnostic and assessment of IFRS transition impacts and recommendations on potential measures to mitigate significant and unwanted effects
- solve specific technical challenges related to complex transactions and specific issues that affect central banks
- IFRS 9 may have a massive impact on the financial positions and statements of performance of central banks — the adoption of IFRS 9 requires detailed assessment of financial, operational and market impacts
- recommendations to help ensure compliance with central bank laws

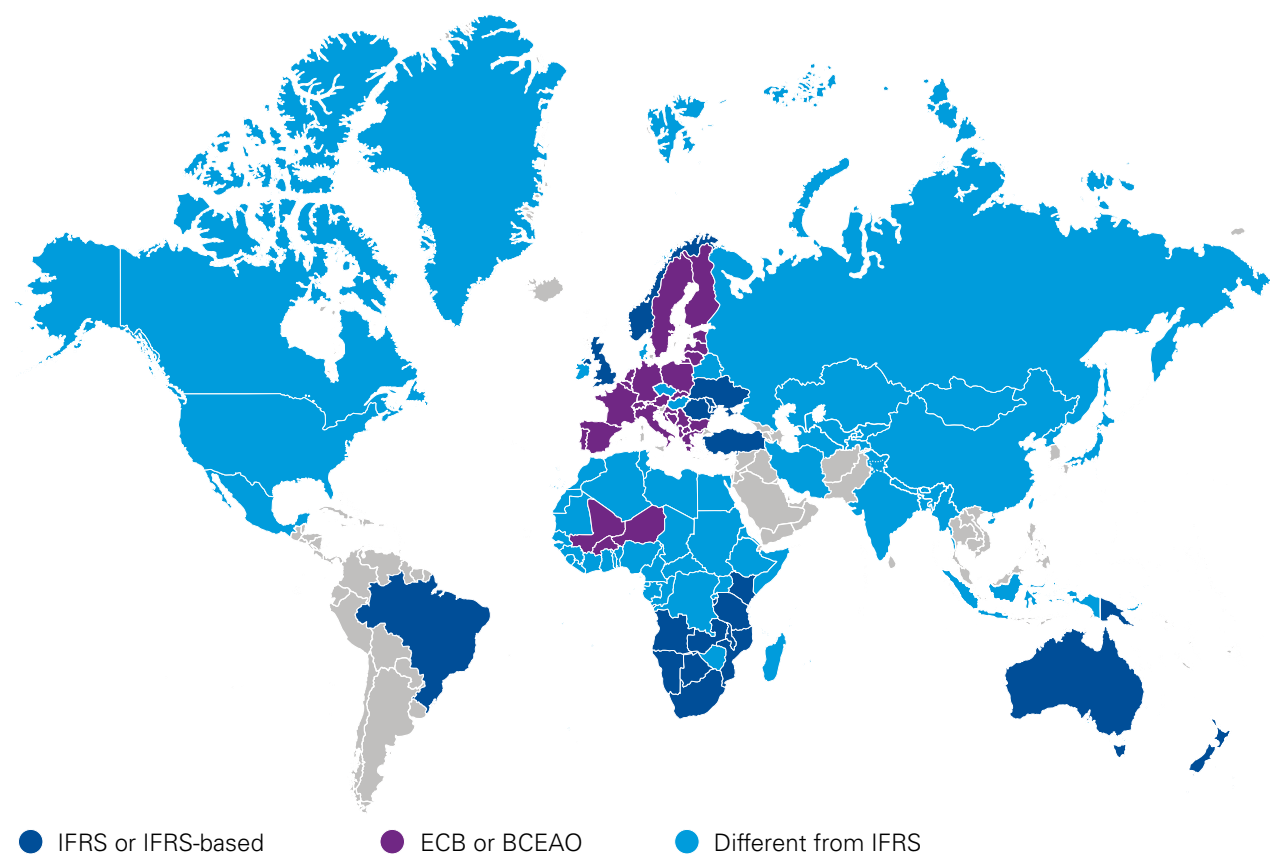
and regulations as well as with reporting requirements to other organizations (such as the IMF)

- benchmark with peers on accounting practices, reporting models and finance function
- development of accounting manuals and procedures related to the preparation of financial statements and disclosures
- transforming and optimizing the finance function
- adjustment to accounting systems in order to bring them to compliance with IFRS
- extensive training programs delivered to the finance department of central banks.

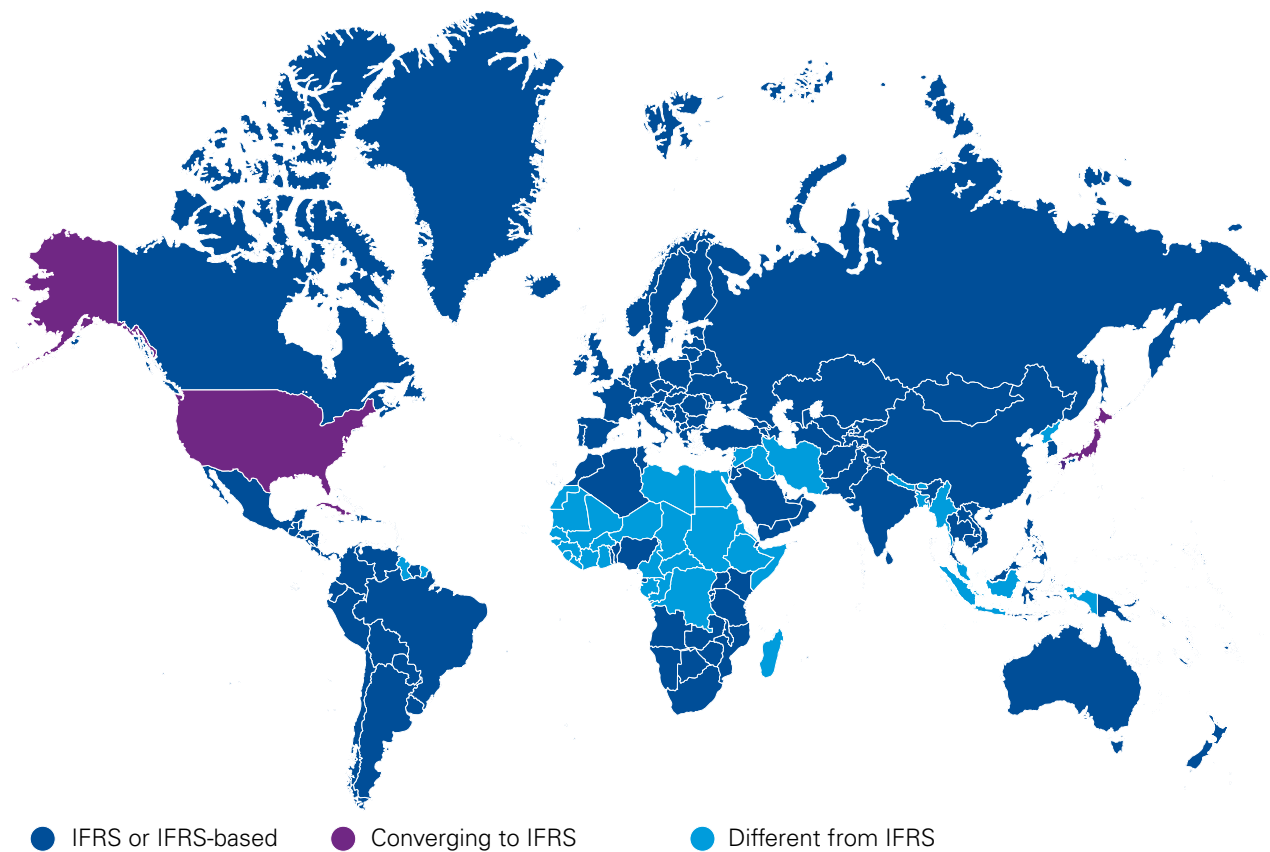
KPMG's Central Bank network professionals have collaborated with central banks across the world in IFRS matters:

- Bank of Portugal
- Central Bank of Kosovo
- Nacional Bank of Angola
- Central Bank of Nigeria
- Bank of Mozambique
- Central Bank of Banco Cape Verde
- Central Bank of São Tomé e Príncipe
- Nepal Rastra Bank

IFRS conversion by central banks



IFRS conversion by banks, insurers and corporates



9

Cyber security and digital disruption implications

How digital disruption in financial services is changing the cyber-security posture of central banks.

Like all organizations, central banks are heavily reliant upon technology for operational continuity. A reliable, uninterrupted process gives the central bank, the government, financial market counter-parties and the wider population confidence that transactions (increasingly in real time) will proceed smoothly. Those central banks that oversee commercial banks' payment systems need to have the necessary skills and IT and reporting structures in place to identify systemic risks.

The risks are increasing, with new threats and attacks targeting several banks worldwide in recent times. An increase in the adoption of technology, together with new structures and processes, has been a challenge for all central banks and they need to establish additional methods to identify and protect themselves against cyber threats and to detect, respond to and recover operations during or after cyber-security incidents.

Organizations can no longer rely on traditional techniques to protect themselves adequately against new threats because the attackers know what works. There are state and non-state actors present who possess significant resources to create complex attacks which are neither easy to detect nor contain. The sophistication of attacks is increasing, along with the expectations of counter-parties, the general public, management and data protection requirements.

Central banks work closely with commercial banks and other financial institutions and engage outsourced

commercial service providers to enhance operational efficiency and effectiveness. These relationships often require the exchange of sensitive information and connection to external systems that introduce an assortment of risks. An external party's failure to restrict access to its IT environment could render connected central bank systems vulnerable to intruders.

Several initiatives have started to demonstrate commitment to cyber-security risk management and to provide ways to reduce central banks exposures. For example, The Bank for International Settlements (BIS) has carried out important initial work in this area over the past 2 years. The European Central Bank has recently started to collect information from 18 of the Eurozone's biggest banks, which will be obliged to inform regulators of 'significant' cyber attacks, the main objective being to identify trends and to inform banks of possible impending events.

Given the highly sensitive nature of central banks, any kind of negative incident could attract unwelcome publicity and undermine trust and confidence. Therefore, management will be keen to develop strong defenses against external threats. The KPMG Central Bank network has assisted central banks in developing a preventative approach to protect the digital environment. With improved threat detection, security analytics and response capabilities in all digital initiatives, banks can better identify, investigate and respond to incidents in order to limit and reduce the impact of undesired events.

How KPMG's Central Bank network can help

KPMG's Central Bank network can assist by developing a clear digital strategy that fully supports central banks' objectives and which places a greater focus on the economic and business impact of technology. With organizational continuity as a key objective, the main risks facing organizations are addressed. As trusted advisors to governments and industry around the world, the KPMG Central Bank network helps to find creative and forward-thinking ways to address cyber security and enhance internal controls during the digital transformation. This includes:

- establishing digital and technology strategies
- project management, vendor selection and system testing
- carrying out business process reengineering and recommending new IT infrastructure and applications for existing and new payment systems
- assessing and developing strategies to mitigate external party risk
- carrying out digital risk assessments including full cyber security transformation assistance
- evaluating and improving controls over insider trading, money laundering and procurement.



Case studies

Transforming core banking services

Over 3 years, a team of professionals from the KPMG Central Bank network worked closely with the central bank in one of the largest developing economies to produce a step change in efficiency, improving transaction processing, introducing real-time reporting, internet banking for customers and automated settlements and enhancing liquidity management processes. The team led the business process reengineering, helped with tenders and subsequent vendor evaluation, contracts and service level agreements and project managed the transition. The client now provides a far more effective core banking service to its stakeholders, with better funds flow.

A step change in IT performance

Through an understanding of the unique challenges of IT in central banking, along with the KPMG Central Bank network's commercial banking experience, the KPMG Central Bank network team was able to help a major European central bank with a wide range of important programs. The KPMG Central Bank network team worked on IT strategy (including infrastructure architecture), IT management (such as process optimization and IT compliance) and systems design. The central bank now has a far more comprehensive reporting and analysis capability and greater confidence in managing the monetary infrastructure, with higher levels of resilience, continuity and security.

Providing cyber-security assessments

KPMG in Qatar was selected by the central bank of Qatar to conduct a cyber security maturity assessment (CMA) across the banking sector. Working with the support of KPMG in India, the KPMG Central Bank network team worked closely with the Qatar Central Bank to design a framework for the assessment that comprised leading cyber security standards. All banks were individually assessed across various parameters and each bank was then provided with a view on their CMA and a holistic view across the banking sector was provided to the central bank with recommendations and a roadmap.

Providing cyber-security transformation

KPMG in Brazil has been working together with complex clearing organizations, helping clients transition from a reactive to the proactive operating mode required for transformative change. The KPMG Central Bank network team assists clients to manage technological and system vulnerabilities and to address the core people processes, culture and behaviors related to the cyber security posture needed to properly manage cyber threats and risks. By bringing together specialists in information protection and business continuity, risk management, organizational design and digital, KPMG's Central Bank network team tailors strategies relevant to our clients. Using their extensive experience, they were able to design, structure and implement programs that deliver sustainable benefits.

Benchmarking the central bank's cyber security

Cyber risks are a top priority for many central banks, not only due to the criticality of central bank systems and the high confidentiality of their information, but also due to the rapid rate of evolution of new cyber weapons. One of the world's major central banks engaged a team from the KPMG Central Bank network to review and benchmark its processes and controls to manage cyber risks. The results showed the board that the bank was indeed up to the extremely high standard expected of a central bank, but also provided some recommendations to further optimize the internal controls and processes.

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Effective financial oversight — accountability and transparency

A robust corporate reporting process is the foundation for effective financial oversight, accountability and transparency.

It is good practice to publish promptly audited financial statements even if a central bank is not legally obliged to, as it provides a level of accountability and transparency that is consistent with its public interest mandate.

An independent external audit adds credibility to the financial statements of a central bank, but the board remains primarily responsible for those financial statements. The board may establish an audit committee to assist in discharging this responsibility and, when it does, the work of an audit committee should include:

- evaluating the adequacy of the finance function, the appropriateness of the financial reporting framework and significant financial reporting issues
- assessing management's judgments, including its choice of accounting policies and estimates
- assessing the completeness, clarity and transparency of financial statements.

Quite apart from the external audit report, central banks may also be required to provide other types of external reports to stakeholders or internal reports to the board, where accountability and transparency is enhanced by obtaining independent assurance on the contents of the report.

How KPMG's Central Bank network can help

KPMG's Central Bank network professionals have extensive experience in performing independent financial statement audits and in providing and other assurance services to central banks around the world.

Other assurance services include reporting on:

- compliance with rules and regulations, such as rules on insider information, anti-money laundering regulations and minimum standards for risk management
- accounting for costs and the use of funds
- proper functioning of information systems.

KPMG Central Bank network professionals also have significant experience in providing non- assurance services:

- Accounting advisory services include assistance with:
 - adopting the IFRS framework
 - implementing new financial reporting requirements
 - accounting for complex transactions.
- Finance/accounting services include assistance with:

- transforming the processes and organization of the finance function
- integrating risk and accounting processes
- preparing financial information for internal and/or external purposes.

It is important to note that the nature and extent of non-assurance services that may be provided by the external auditors are subject to national and international ethical requirements and consideration by the audit committee.

KPMG's Central Bank network currently audits many central banks in the world's largest economies and has extensive experience in high growth markets. KPMG's Central Bank network external audit clients include:

- The Federal Reserve Bank System
- Deutsche Bundesbank
- Bank of England
- Banque de France
- Reserve Bank of Australia
- Banco de España
- Swiss National Bank
- National Bank of Austria
- Central Bank of the United Arab Emirates
- Bank of Greece
- Qatar Central Bank

KPMG's Central Bank network

KPMG's Global Central Bank network brings together knowledge and experience from its specialists around the world to help central banks deal with their unique challenges.

The KPMG Central Bank network has a wealth of industry experience and specialist knowledge, tapping into a global network of audit, tax and advisory services. KPMG's Central Bank network has worked with central banks in mature and emerging economies and has close relationships with many of the

major financial market players, regulators and leading industry bodies.

KPMG Central Bank network specialists engage closely with central banks around the world, advising them and providing input on key strategic challenges. In addition, the practice's steering group regularly considers emerging issues and studies central bank accounting practices through benchmarking studies and other thought leadership publications.

KPMG's Regulatory Centers of Excellence help drive and shape the latest regulatory developments and provide cutting-edge advice and support in supervising compliance. For central banks in fast growing economies, our Financial Services High Growth Markets Network champions new innovations and coaches and challenges financial institutions and their regulators on strategies and operations.

Additional KPMG publications



Creating a world class central bank
December 2016



Peer analysis: predicting supervisory challenges
May 2016



Evolving banking regulation part five
February 2016



Governance of central banks
February 2015



Creating a world class central bank
May 2014



Current trends in central bank financial reporting practices
October 2012



Central bank accountability and transparency
October 2009

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