Banking with a moving horizon

Banking perspectives Saudi Arabia 2023

April 2023
KPMG Professional Services

Contents

Foreword 3
Executive summary 4
Financial performance 6

Inevitable focus on capital and liquidity requirements **12**

The carbon credits platform as vital step towards net zero **14**

Audit quality as a cornerstone for transparency **16**

Fintech driving disruption and innovation **18**

Regulating open banking **20**

Industry impact of emerging open banking models **22**

The move to cloud is gaining momentum **24**

Banking in the metaverse and the question of identity **26**

The roll-out of Basel III financial reforms **30**

Evolving data protection requirements **34**

Countdown to global minimum taxation **36**

Responding to advancing financial crime **40**

References 42
Contacts 43

Global changes, local opportunities

In recent years, the banking industry experienced a wave of innovations driven by digital disruption and evolving customer expectations. The drivers of change are still relentless and spreading to avenues that were never expected in an industry founded on trust, complexity, privacy, and close vaults. Digital disruption and open banking are redefining these terms in a very different way.

In this newest edition of our annual flagship publication on the banking industry, we explore some of the most profound evolutions in global banking that are providing grounds for market participants in Saudi Arabia to grow. They can do so if they are agile, innovative and well-capitalized.

Awareness of developments in the banking industry and strong domestic demand of financing are prerequisites for sustainable growth in Saudi Arabian banking industry. Market participants need to cater to fast-paced changes in customer demands and inhibit agility. This also requires close coordination with the regulators.

We have attempted to cover the changes in the global banking landscape following the increasing interest rate environment that sparked recessions in some major economies, as well as impactful innovations that are reshaping opportunities for banks in the Kingdom. Saudi Arabia remains one of the fastest growing economies in the world and has a vast plan of diversification of its revenue streams, offering opportunities for banks to take relatively risk-free exposures on long-term public and private sector projects.

On the operational side, change and its drivers are all around us. Take digitization as example: the growing desire by consumers to access financial services from digital channels has led to a surge in new banking technologies that are reconceptualizing banking. With an initial first wave of fintech-led innovation under way, rolling in the new digital economy, customer-centricity, and greater convenience for end-users. Followed by a second wave of applications and solutions focused on solving and supporting major global transitions, like the demographic impact on productivity, achieving a low carbon economy, and automation.

And the biggest change-the one caused by change itself and the one the most bearing on the industry: regulation. As the pace of change increases, so too must the application and enforcement of rules and regulations to govern that change. Big change demands more regulation.

Any period of dynamic change presents challenges and uncertainties about the future. Our team is here to provide you with a confident navigation of the waters ahead, and we look forward to connecting with you to discuss further the themes covered in this edition.

Dr. Abdullah Hamad Al Fozan
Chairman & CEO

Ovais Shahab
Head of Financial Services

Executive summary

01 Inevitable focus on capital and liquidity requirements

Mega projects planned in the Kingdom, valued at over US$750 billion, will place exceptional demands on money supply and the banking sector. Liquidity requirements will increase considerably in the short to medium term and banks will need to adopt aggressive expansionary strategies to meet obligations while maintaining sufficient liquidity. We look at how banks can respond to high liquidity demand while capitalizing on opportunities to pivot towards profit-making and growth.

02 The carbon credits platform as a vital step towards net zero

A bold initiative by Saudi Arabia's PIF to establish the Voluntary Carbon Market (VCM) is a landmark in the Kingdom's energy transition and is viewed as a necessary component of achieving a net-zero economy by 2060. The VCM platform will allow companies to buy and sell carbon credits, helping all countries in the GCC region and the world to cut greenhouse gas emissions, reduced carbon footprint, meet climate obligations under the Paris Agreement, and mitigate climate change. For the banking industry, the debut of the VCM heralds the entrance of an influential region to the global carbon trading market and a shift in focus towards ESG and sustainability.

03 Audit quality as a cornerstone for transparency

Rapid change and disruption in the business environment, coupled with greater scrutiny and increasing demand of all stakeholders means audit quality has never been more important. We explore how new technologies, approaches, culture, and a focus on talent are delivering a more efficient and accurate auditing framework that is helping firms to rise to the challenge and perform audits that delivers across key metrics of quality, deliverables, and timing.

04 Fintech driving disruption and innovation

A new wave of pioneering applications and innovative tools is focusing on solving some of the major challenges in the financial services sector today, with investment and home-grown expertise contributing to an exciting new era that will push the boundaries of technology and finance. Saudi Arabia's fintech-friendly environment is reaping rewards, delivering efficiency, convenience, personalization, and access to data-driven services across every aspect of banking, from electronic payments and currency exchange to capital markets to business tools and information, and everything between.

05 Regulating open banking

Digitization, banking-as-a-service, open banking, and the introduction of new technology is creating the need for tighter regulation, not only from the industry's perspective but also in the way third parties interact with it. Saudi Arabia's regulators have been busy developing frameworks and establishing rules and regulations across a plethora of related areas affected by the push to an open banking model, such as upholding consumer rights, data protection, cybersecurity, cloud, a unified data strategy, integration with existing regulatory framework of traditional banking, and the development of a stable and resilient system that protects banks, businesses, and consumers.

06 Industry impact of emerging open banking models

The financial services ecosystem is making headway in turning the concept of open banking into reality, with measures underway to embed open banking standards into traditional banking practices in the Middle East, including the publication of a set of recommendations by SAMA. This briefing explores the two principal models of open banking – banking-as-a-platform (BaaP) and banking-as-a-service (BaaS) – and concludes with a call for greater collaboration and critical partnerships within the industry to seize the opportunities of the open banking domain for the benefit of all.

07 The move to cloud is gaining momentum

The advent of cloud computing is a key enabler in advancing open banking in the kingdom, allowing Saudi Arabia's banking industry to deliver best-in-class services to its customer base. However, banks still faced two main challenges; the first, the availability of domestic cloud supply that complies with SAMA's data sovereignty regulations, and the second, the quality of that supply. Now that cloud providers are allowed to enter the Kingdom and establish a cloud-based computing network, and several hyperscalers announcing plans to build cloud regions in the Kingdom, those challenges have dissolved away to leave perfect blue skies.

08 Banking in the metaverse and the question of identity

With the launch of Web 3.0 imminent, the next seemingly small step – banking in the metaverse – is a natural progression. However, before that happens, we need to overcome several issues that may prove challenging, not because we lack the technological know-how but because many solutions require collaboration and consensus on standards, rules, and protocols. For example, proving the provenance of a virtual identity touches every aspect of banking. Just how will banks verify the identity of an avatar in the metaverse and connect it to an individual in the real world?

09 The roll-out of Basel III financial reforms

A state-of-play briefing on the implementation of Basel III final reforms, which cover credit risk, market risk, operational risk, credit value adjustment (CVA) and leverage ratio. The reforms conclude Basel III implementation from a regulatory standpoint, in line with the internationally agreed timeline set by the Basel Committee on Banking Supervision (BCBS), the global standard-setter for the prudential regulation of banks.

10 Evolving personal data protection requirements

The Personal Data Protection Law (PDPL), Saudi Arabia's first comprehensive generally applicable data protection law, will have a significant impact on the banking and financial services industry – need for tighter internal controls, and the setting of new policies and protocols. While most requirements are administrative in nature, the PDPL does impose general obligations on data controllers (and the entity) to ensure the security, accuracy and confidentiality of personal data which can extend to IT infrastructure, systems, and policy layers.

11 Countdown to global minimum taxation

After six years of negotiation and policy forming, the OECD/G20 Inclusive Framework (IF) on Base Erosion and Profit Shifting (BEPS) is finally entering its final chapter in addressing the tax challenges arising from the digitalization of the global economy. The right for jurisdictions to apply taxation and the introduction of a global minimum corporate tax rate of 15 percent means that nations will be able to protect their tax bases by forcing multinational enterprises to pay a fair share of tax wherever they operate. Saudi Arabia is one of 135 countries preparing for the new reforms by implementing global model GloBE rules.

12 Responding to advancing financial fraud

Faced with increasingly sophisticated methods by criminals, the banking industry is using every means at its disposal to bolster fraud detection and prevention measures. Points of attention are the implementation of technologies such as analytics, AI and machine learning, systems, and new regulatory measures being used to combat financial fraud and cybercrime. On the regulatory front, the banking industry is tackling vulnerabilities with robust regulation, rigorous strategies, and management systems and policies. Further, SAMA has issued instructions to all banks to implement measures against financial frauds and to protect banking consumers and has set in place a Counter-Fraud Framework which banks must comply with fully by 2024.

Financial performance indicates growth in high yield assets and profitability

The financial results of the banking sector in Saudi Arabia for FY2022 reflect a robust industry performance, particularly highlighted increase in net profit by circa 28 percent as compared to FY2021, and total assets growth of 11.5 percent since 31 December 2021.

While global supply chains have been under pressure due to challenges on multiple fronts including geopolitical apprehensions, consistently higher oil prices have helped the domestic economy to thrive and expand on its Vision 2030 ambitions.

The banking industry has continued to capture the benefits of economic expansion, evidenced by an increase in lending and reaching an industry-wide loan-to-deposit ratio of approximately 95.5 percent at the end of December 2022 and noticing increase in loan book by 14.44 percent while witnessing increase in deposits by 8.34 percent. Further, a declining trend was observed in estimated credit losses (ECL) year-after-year.

The increase in net profit of 28.39 percent is contributed by increase in average net interest margin by 0.2 percent supported by double digit asset growth and interest rate increases across all portfolios. Moreover, there has been a marked decrease in ECL allowances which has declined by 19.25 percent when compared with FY2021. ECL allowances have been lower on account of better portfolio performance across various sectors which have reaped benefits of economic expansion.

A loan-to-deposit ratio of 95 percent across the industry demonstrates there will further pressure on the banks to increase liquidity and raise deposits to support the healthy expansion of asset growth which is expected to continue in line with the economic growth and focus of the government on key sectors and the roll-out of its giga projects. Banks have anticipated these pressures, evidenced by their focus on raising Tier I capital in the form of debt issuances, notably sukuk, and tailoring their banking products to future economic needs and shifting market dynamics. An upsurge in such Tier I capital issuance has been noted across the banking participants with the aim to support core equity base and fulfil the financial and strategic needs. During last twelve months, US$7.5 billion has been issued, with the expectation to further increase soon.

In the first few months of 2023, the global banking sector is faced with challenges, particularly heightened by shockwaves arising out of Silicon Valley Bank and Signature Bank in the US, and the acquisition of Credit Suisse by UBS in Europe in an attempt to save the sector from further upheaval. While these developments do not leave any substantial effect on Saudi banks; such instances demand some introspection and risk aversion to avoid any spill-over effect.

Looking ahead, while macro-economic indicators are supportive of further growth, industry participants have to learn from global challenges and local opportunities and pursue competition on the basis of individual strengths. The regulator and the market participants will have a closer eye on the capital adequacy and liquidity position and a proactive approach will help market participants in acquiring market share.

An ambitious economic agenda of the government will help the banking industry to further grow during 2023. The increased cost of fund and liquidity constraints will require strategic planning for capital injections and innovative funding solutions.

Khalil Al Sedais
Regional Managing Partner - Riyadh

Industry performance of publicly listed banks

Net profit after zakat and tax

28.39%

YE – 2022 net income **SAR 62.71 billion**
(YE – 2021: **SAR 48.84 billion**)

Total assets

11.49%

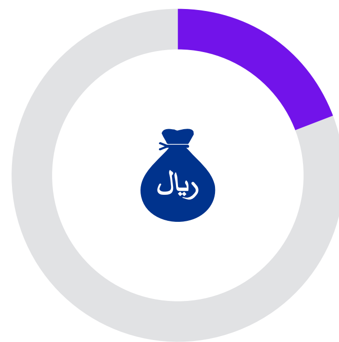
As of YE **– 2022 SAR 3,382 billion**
(YE **– 2021: SAR 3,033 billion)**

Total customer deposit

8.34%

As of YE **– 2022 SAR 2,296 billion**
(YE – 2021: SAR 2,119 billion)

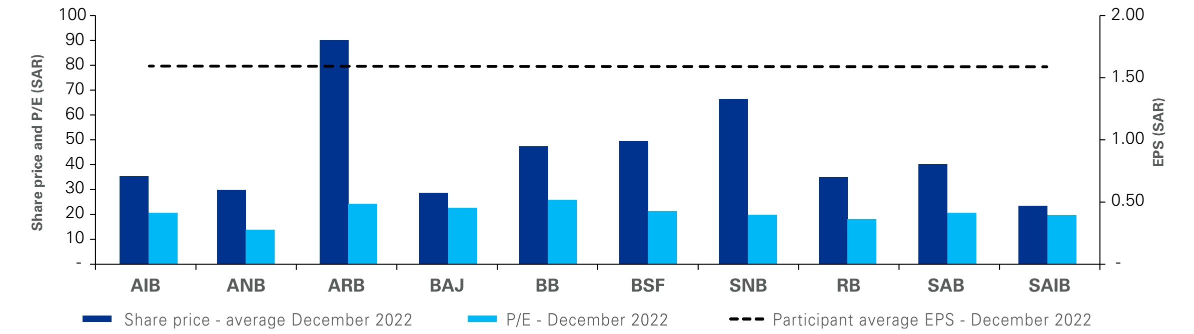
ECL charge for the year



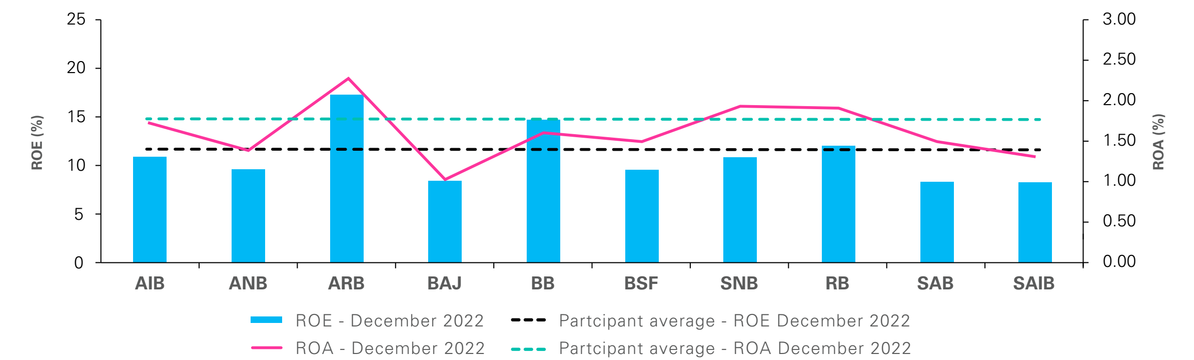
19.25%

YE **– 2022 SAR 9.87 billion**
(YE **– 2021: SAR 12.22 billion)**

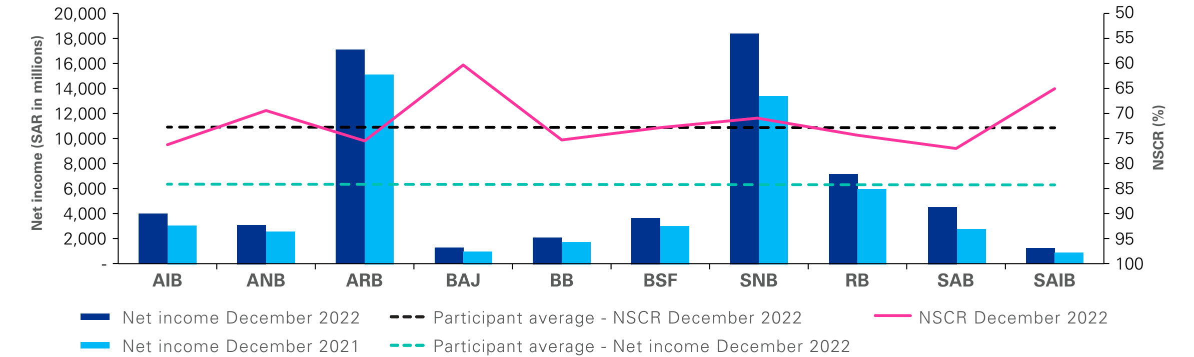
Share price, P/E & EPS



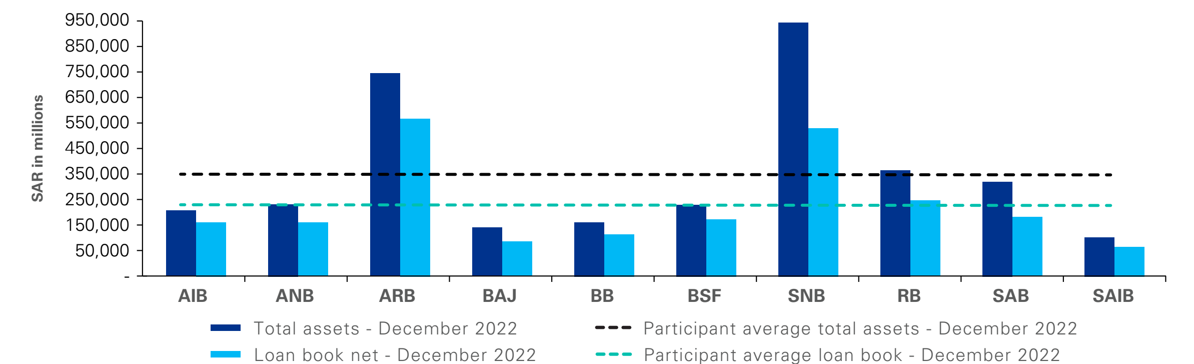
ROE & ROA



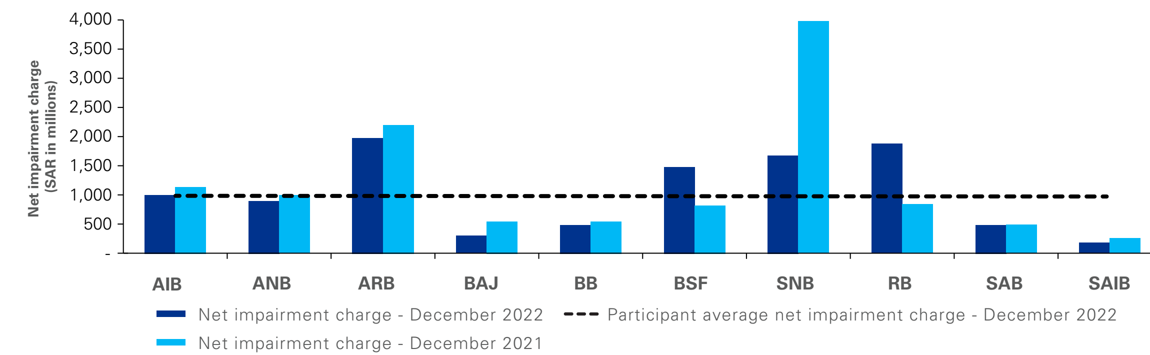
Net income



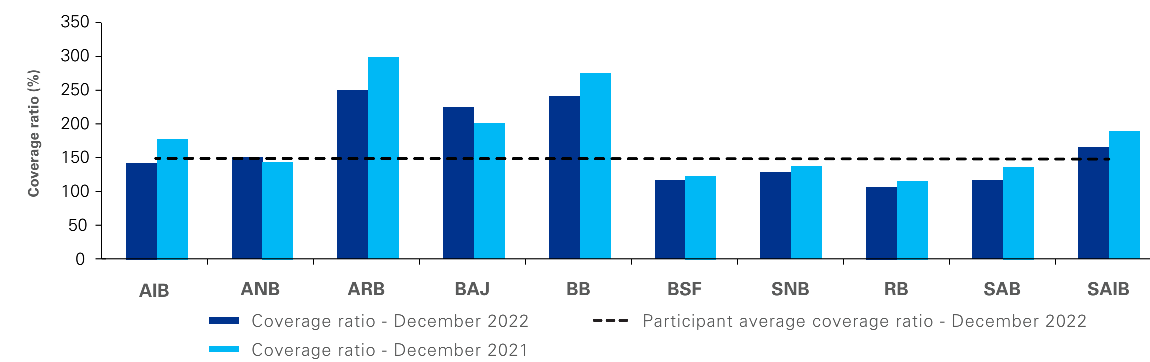
Total assets & Total loan book



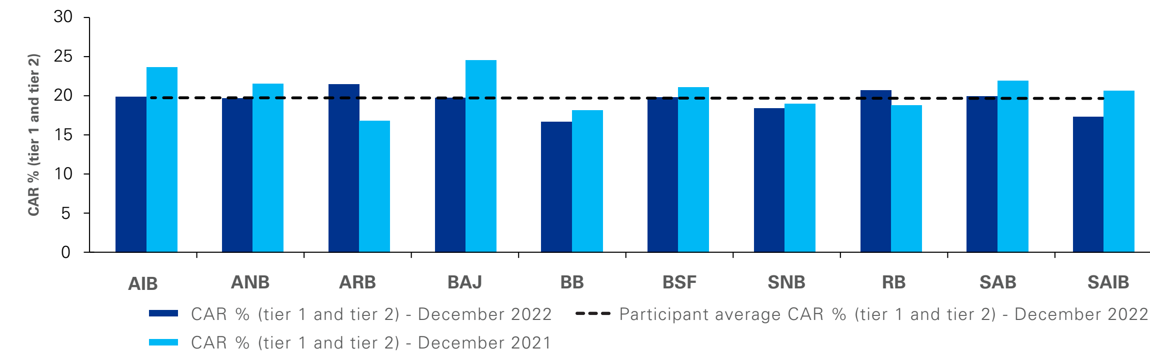
Net impairment charge



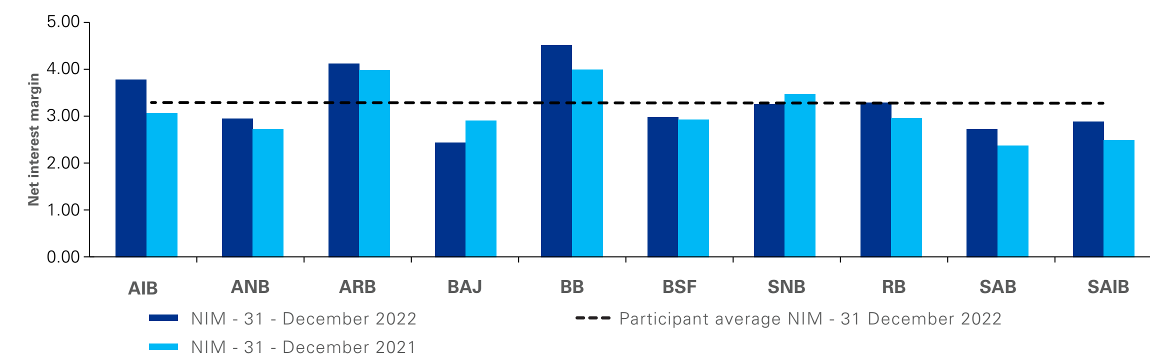
NPL coverage ratio



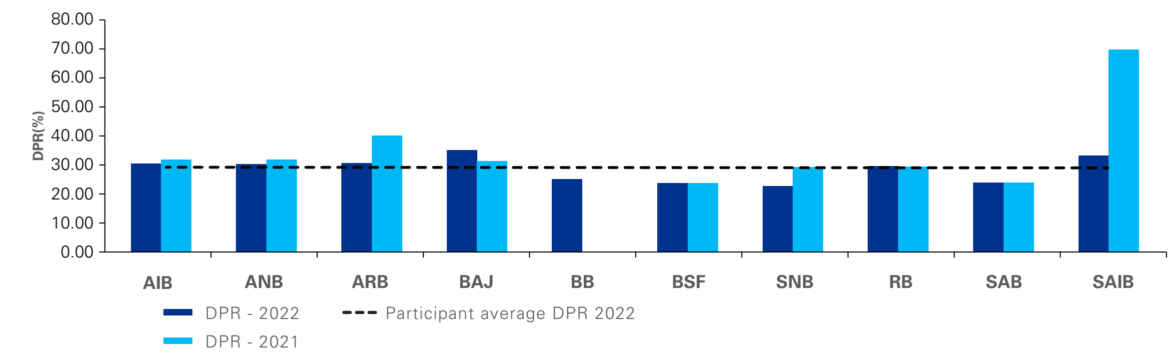
Capital adequacy ratio



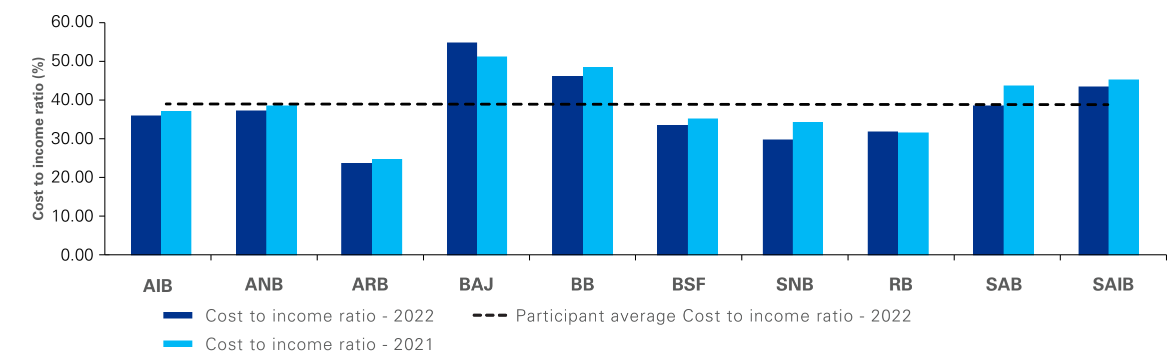
Net interest margin



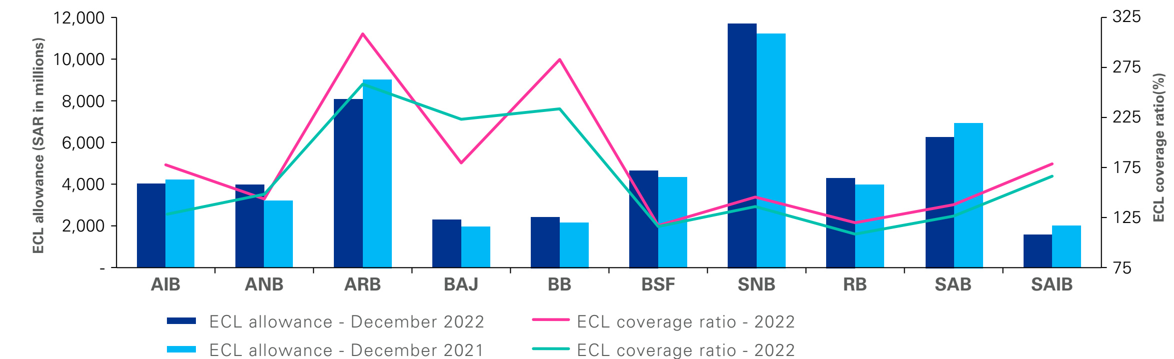
Dividend payout ratio



Cost to income ratio



ECL allowance and coverage ratio



Legend:

Alinma Bank	**AIB**	Bank Al Bilad	**BB**	Saudi Awwal Bank	**SAB**
Arab National Bank	**ANB**	Banque Saudi Fransi	**BSF**	Saudi Investment Bank	**SAIB**
Al Rajhi Bank	**ARB**	Saudi National Bank	**SNB**		
Bank Al Jazira	**BAJ**	Riyad Bank	**RB**		

Glossary:

P/E ratio is calculated as the average closing price (as derived from Tadawul) divided by the earnings per share (EPS). **ROE** is the ratio of net income for the year ended 31 December 2022 to total equity. **ROA** is the ratio of net income for the year ended 31 December 2022 to total assets. **Net interest margin** is the ratio of net interest income for the year ended 31 December 2022 to average of earning assets. **Coverage ratio** is the ratio of total expected credit losses (ECL) for loans and advances to total non-performing loans (NPL). **Loan-to-deposit** is the ratio of total loans and advances to total deposits. **NCSR** is the net special commission rate.

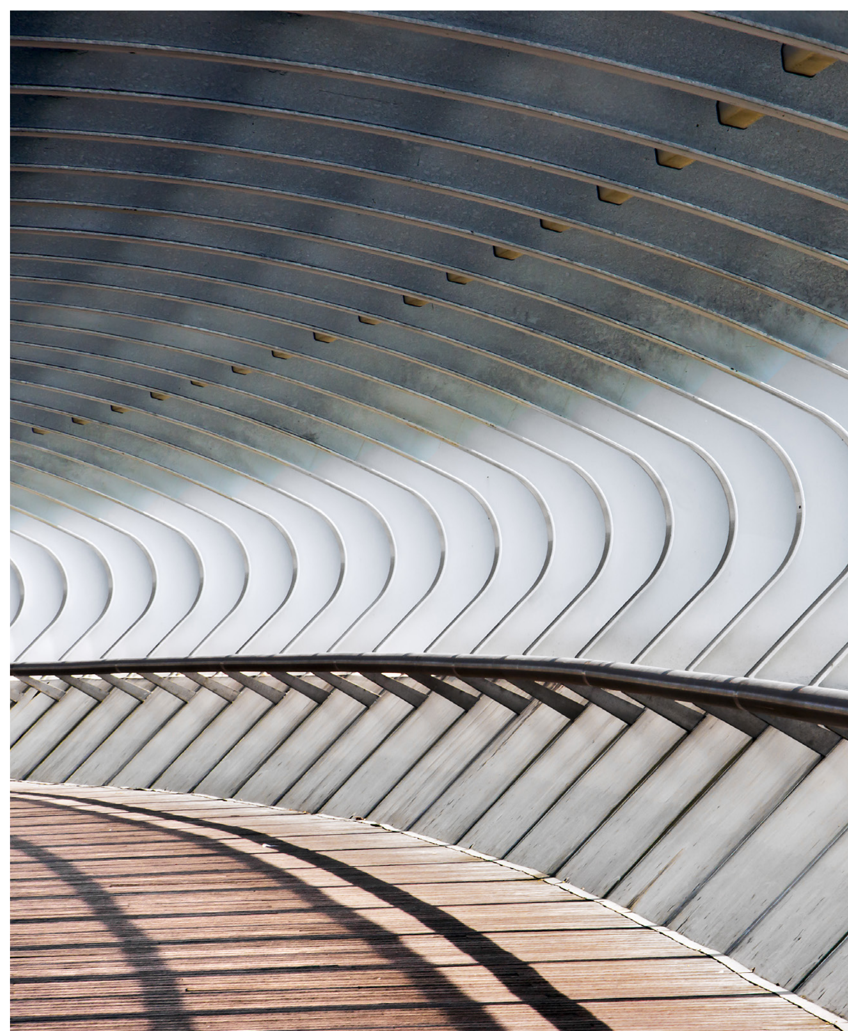
Inevitable focus on capital and liquidity requirements

Recent developments within the global banking industry re-emphasize on the continuous need of monitoring capital and liquidity positions, regardless of the size of the bank or the economic environment in which it operates.

For decades, funding gaps in the short-term have been tolerated on the basis that contractual maturities on liabilities are often rolled over, liabilities are often rolled over on contractual maturities and hence banks shall continue utilizing this opportunity and invest in long-term high-yield assets – a rationalization is required today.

This approach has had built-in controls where asset-liability committees (ALCOs) continue to keep a finger on the pulse at the bucket-mismatches, while regulators are monitoring key ratios including the capital adequacy ratio (CAR), liquidity coverage ratio (LCR), cash reserve ratio (CRR) and net stable funding ratio (NSFR). In Saudi Arabia, a country with a fast-developing banking industry, it is inevitable for market participants and regulators to continue working closely together and avoid potential challenges of capital or liquidity, as have recently been faced by some banks in markets in Europe and the US.

The number and scale of projects planned in Saudi Arabia over the next seven years is unprecedented; the total value of the giga projects program alone is over US$750 billion.[1] With such ambitious government plans and the required level of investment, the demands on the capital base of the banking sector and its liquidity position are expected to grow considerably. As construction activities crank up, banks will need to adopt aggressive expansionary strategies to maintain sufficient liquidity in order to meet respective contractual obligations.



There is a large growth agenda among banks, driven by increasing demand from public and private sector projects and continuous growth in mortgage finance. They will need innovative solutions for generating long-term liquidity and strengthen their capital base for maximizing their earnings and not losing on potential opportunities.

This will undoubtedly place substantial demands on money supply from now through 2030, but it also provides an opportunity for the sector to mature and pivot towards profit-making and growth.

The general principles of managing liquidity are understood and banks are expected to maintain sufficient liquid assets to settle liabilities as and when they arise. However, judgement is made on expected maturity of on-demand deposits that continue to represent a substantial portion of the overall liabilities of banks in the Kingdom. In an increasing interest rate environment, when depositors have also shifted their balances into savings and time deposits, the matter is further complicated. Simultaneously, banks continue to explore opportunities for profit making within contractual-liquidity gap and reinvestment of capital.

Over the last year, the ten Tadawul-listed banks saw their combined assets increase to SAR348.57 billion, predominantly on account of growth in loans amounting to SAR279.97 billion, with as major liquidity contributors the current short-term deposits. However, we have also seen an upsurge in Tier I capital issuance across the banking participants that added SAR28.[1] billion liquidity in addition to banks' annual earnings of SAR62.7 billion. This cumulative support of an increased equity base helped banks to fund long term assets.

SAMA has always had a robust mechanism of monitoring capital adequacy and liquidity position of banks through requirements, which includes tracking SLR, CRR and CAR. These requirements are dynamic in nature and continue to grow with the increasing size of banks' balance sheets. Moreover, banks are allowed to repo from SAMA against essentially their investments in Saudi government, if and when they are in need of short-term liquidity.

With our high-level analysis of Saudi banks' exposure to negative interest margin when global instances surfaced. Whether liabilities are priced more frequently than assets in an increasing interest rate environment. We have also noticed that on a portfolio level the risk is substantially mitigated due to non-interest bearing deposits that represent 53.05 percent of the total liabilities of listed banks.

Theoretically, the risk still exists for ad hoc transactions for attracting institutional depositors at high rate or extending financing at low margin to support growth agenda. However, with strong monitoring and engagement of ALCOs at banks, this is not expected to happen.

Banks are expected to continue analyzing their mix of deposit based between remunerative and non-remunerative and accordingly price new liquidity avenues based on the necessity and tenure of corresponding asset sought to be funded. Simultaneously, the management's judgement of expected maturity of on-demand deposits will be subject to higher diligence by those charged with governance and the regulators. Some of the banks may take a cautious approach towards underwriting loans if their loan-to-deposit ratios (LDRs) are already ranging from 82.07 to 100.98 percent, with an average of 95.49 percent. Banks may strategize to achieve a mix of high current yield and a more favorable outlook.

The government in Saudi Arabia has taken a series of initiatives to attract foreign direct investment including measures to attract interest in the capital markets, hence an expected rise in both the equity and fixed-income markets is likely to benefit the banking industry as well. Simultaneously, there have been attempts of loans securitizations, while it is expected to grow in the future for helping banks as well as other non-bank financial institutions (NBFIs) to enhance overall ecosystem. Banks can offer their robust process of credit initiation and plan for larger volumes, while NBFIs can achieve sustainable income on their available liquidity. Overall, there is an increased awareness of liquidity demands and efforts are being made by the regulators and market participants to achieve growth aspirations.

Finally, Basel III final reforms have already been implemented from 1 January 2023, which we will cover in greater detail later in this publication.

Ovais Shahab
Head of Financial Services
E: oshahab@kpmg.com

The carbon credits platform as a vital step toward net zero

The establishment of a carbon credits trading platform in Saudi Arabia brings a viable voluntary carbon market closer for the MENA region and is a significant milestone for the Kingdom's decarbonisation journey to becoming net zero by 2060.[2]

Carbon credits trading and the wider carbon ecosystem

In September 2021, the Public Investment Fund (PIF) and Saudi Tadawul Group announced the Riyadh Voluntary Carbon Market (VCM) initiative.[3] Just over a year later, Saudi Arabia's first carbon credit auction took place, one of the largest the world had seen.[4] The auction offered a total of one million tons of carbon credits for sale – each credit CORSIA compliant and validated by a Verra registered certificate. Further auctions are scheduled for the final quarter of 2023. In addition, trading in carbon credits will commence this year with the launch of a carbon credits trading platform and the establishment of a VCM, enabling companies to trade credits and offsets.

The VCM trading platform is attracting widespread interest with five leading Saudi Arabian businesses – Saudi Aramco, SAUDIA AIRLINES, ACWA Power, Ma'aden, and ENOWA, a subsidiary of NEOM – having signed non-binding MoUs to become the first partners of the regional VCM.[5] Partners will support PIF in the development of the VCM through the supply, purchase, and trading of carbon credits.

The trading platform will encourage companies, institutions, and entire industries to reduce their carbon emissions, and acts as a mechanism to redirect finance to projects that reduce or avoid emissions, or that remove greenhouse gases (GHGs) from the atmosphere.

The next level in carbon maturity

While the VCM will play a significant part in achieving Saudi Arabia's goal of becoming net zero by 2060, if we are truly to achieve decarbonisation and sustainability goals in the long term, it is worth pointing out that carbon credits and carbon offsets do not make a direct contribution to a reduction in emissions. Therefore, carbon offsetting should be considered a short-term fix and will eventually need to be phased out of global emissions reduction strategies.

Nonetheless, carbon credits/offsets are an effective way of redirecting finance towards carbon zero or carbon net positive projects and initiatives. As such, credits and offsetting will continue to play a major role in short- to medium-term mitigation strategies, at least until technologies and solutions mature enough to contribute to achieving the ambitious emissions targets currently being set both locally and internationally.

The UN Net-Zero Banking Alliance Finance Initiative

The Alliance's Finance Initiative is primarily concerned with setting climate targets within an international framework to achieve cohesive action on global emissions.[6] The thinking here is that major banks and financial institutions are in the best position to divert investments and funding toward industries, sectors, businesses, and projects that are supportive of decarbonization strategies. This is borne out by the scope and boundary of targets set

The launch of the voluntary credits trading platform is a leap forward in the establishment of a viable carbon credits ecosystem for MENA.

out by the framework which accounts for a significant majority of each bank's portfolio emissions. Currently, targets apply to on-balance sheet investment and lending activities (Scope 3) only. Bank targets will eventually include clients' Scope 1, Scope 2, and Scope 3 emissions, where significant and accurate data allows, and will focus on achieving impact in the real economy.

Saudi Arabia's major banks have yet to sign up to the initiative, but there are credible reasons for this. The Kingdom's pledge to reach net zero by 2060, ten years later than the Alliance's target of 2050, is, in part, due to the unique challenges of transforming an economy that relies on fossil fuel to one that is low carbon. For banks in Saudi Arabia, joining the Alliance would result in having to align strategies with both national and international goals, which could create inconsistencies and trade-offs. Managing divestment from fossil fuel investments will be a balancing act between achieving the Kingdom's long-term net-zero goal and meeting anticipated medium-term energy demands that are required to build a net-zero emissions world.

Opportunities for the banking sector

For Saudi Arabia's banking industry, the debut of the VCM heralds an exciting period of transition. Previously carbon trading was associated, some would say unfairly, with greenwashing. Now the tide has turned with trading in credits viewed as a necessary component of achieving a net-zero economy, as evidenced by the rise in demand for carbon credits trading throughout the world's exchange houses, driven by geopolitical pressure to implement minimum climate targets by 2030.

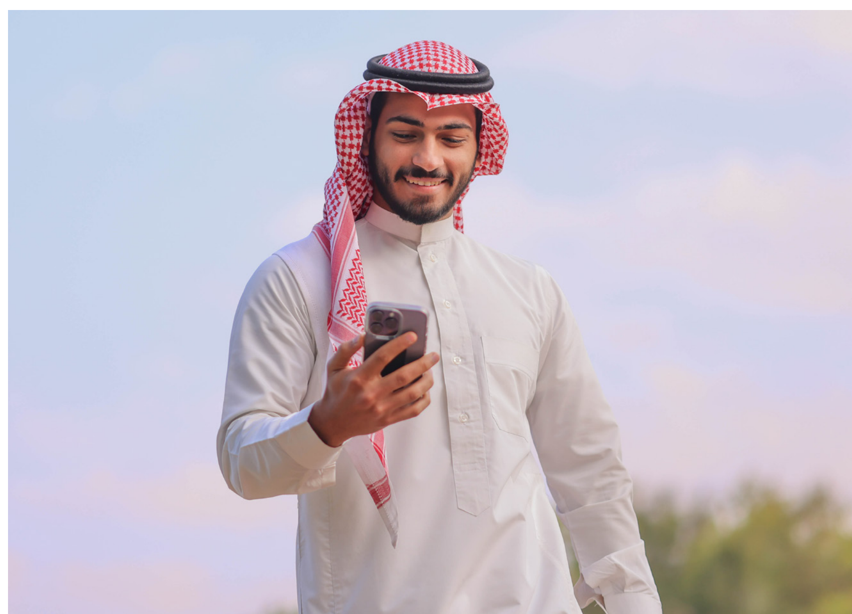
For banks and financial institutions and companies, the initiative delivers immediate opportunities to include carbon offset products and services into their offering. Examples are green bonds and carbon trading accounts. Indirect demand exists too, driven by the increasing popularity of ESG and sustainability-based investments. Banks could go one stage further by incorporating carbon credits into their existing investment and lending portfolios, is either a form, or requirement or a selection criterion. Another area where banks might find value is secondary services such as carbon footprint tracking tools, carbon reduction decision making tools, and sustainable procurement systems.

These are only a few of the opportunities available to the banking sector here and inevitably, there will be further prospects for innovation and growth as the carbon market develops.

Fadi Al-Shihabi
Head of ESG & Sustainability
E: falshihabi@kpmg.com

Audit quality as a cornerstone for transparency

More than ever auditors, audit committees, investors, and regulators are seeing value in achieving high standards of audit quality.



The global market turmoil we have witnessed, and demand for increased transparency suggests that reliable financial information supported by quality audits are key elements in enhancing market confidence and an important tool for effective banking supervision.

External audits performed in accordance with globally accepted auditing and ethics standards provide comfort that the financial information made available to the public is reliable, transparent, and useful to the marketplace and thus contributes towards strength of the banking systems. The Middle East, a region experiencing rapid change in the business environment, has also seen the bar being raised due to the efforts of regulators and the changing demands of stakeholders.

Melding traditional audit practice with new technologies, such as data analytics, machine learning and algorithmic checking is providing organizations with data-driven insights and assisting with evolving reporting and regulatory requirements. A more efficient and accurate audit process is capable of delivering improvements across key metrics including quality of assurance provided, and its timing. This is key for the banking industry and regulators alike.

Other than focusing on technology, audit firms also involve more subject-matter experts to support audit teams in testing complex areas of banking audits, like model driven loan loss allowances, valuation of financial instruments and financial risk disclosures.

And yet auditing is both a science and an art, as it relies on both applied, practical functions as well as instinctive, human interactions and behavioral elements. Fostering the right culture and values is as equally vital to attaining excellence as the process itself. A clearly articulated strategy, a focus on audit quality, consistency, trust, and growth, must be championed by the leadership within the organisation – they share accountability with the auditors. That accountability, along with the assigning of roles and responsibilities, is a result of strong oversight and robust governance.

The importance of the delivery team – appropriately qualified, experienced and with diverse perspectives – is also a must. Indeed, the pursuit of quality starts and ends with people, and for that to materialize the right talent needs to be recruited, trained, and motivated. Continuous personal development plans should be part of the program to maintain high levels of learning and development on technical expertise, professional acumen, and leadership skills – and help to retain talent. On-the-job training plays a key part in developing the personal qualities that are important for a successful career in auditing – including developing professional judgement and scepticism.

These factors are shaping the auditing profession in Saudi Arabia and the region today, just as they are the world over. The pursuit of higher standards in audit quality is an issue that transcends national boundaries and is of global interest.

Bank audits are evolving

As financial institutions – including banks – become increasingly complex, they present new challenges to auditors. During the unprecedented circumstances of 2020, expected credit loss (ECL) models were regarded with a lot of subjectivity, while the recent rally of interest rates is affecting the cost of funds as well as the valuation of long-term assets which are usually purchased at fixed rate.

These complexities are compounded by model-determined values of various financial instruments. New risk assessments are required, often soliciting the involvement of financial risk modelling experts to challenge the credit risk associated with a bank's loans and advance portfolio (loan loss allowances and recognition of other impairments), exacerbated by insufficient data histories (new products, new issues of securities), lack of observable input parameters (collateral information may not be available or may not be sufficiently comparable), among other factors.

Financial instruments are becoming increasingly complex

New risk assessments are required, often soliciting the involvement of financial risk modelling experts to challenge the credit risk associated with a bank's loans and advance portfolio (loan loss allowances and recognition of other impairments), exacerbated by insufficient data histories (new products, new issues of securities), lack of observable input parameters (collateral information may not be available or may not be sufficiently comparable), among other factors.

Raising the bar on audit quality, upholding compliance with global standards, and achieving international best practice are key to maintain and grow the trust in Saudi Arabia's capital markets.

Furthermore, these complexities can evolve further based on the market conditions whereby the current high interest rate environment poses challenges around assessment of liquidity risk and market risk (fixed interest instruments purchased in low interest rate environment). These require involvement of relevant subject matter specialist to effectively challenge the fair valuation estimates, adequacy of disclosures and exposure to risk.

Industry consensus and active collaboration driven by SAMA and audit firms play a pivotal role in Saudi Arabia to mitigate and effectively manage these risks. SAMA has supported in creation of several banking forums to essentially debate evolving financial matters that can impact the industry and agree on a cohesive approach. Moreover, the New Banking Law which is currently in draft stage and circulated for public consultation, will also cement the regulatory framework for banks with latest development in the sector and to ensure stability and growth of the sector.

Going forward

Our focus is to continuously invest and innovate, with an unremitting improvement objective. We are always keen to invest in audit technology comprising the latest audit tools and resources including data and analytics technologies, and to keep our audit methodology updated with the latest developments in the international standards of auditing.

Driven by regulators, clients and audit firms alike, audit quality is truly the foundation of the profession, with a drive to create greater consistency in the performance of all our audits and strengthen the monitoring of engagement milestones by both engagement teams and audit leadership. In-order to achieve this objective, it is critical to leverage advanced data analytics technology to conduct data-enabled, risk-focused and high-quality audits.

In conclusion, the global drivers for raising the bar on audit quality are diverse, ranging from increased stakeholder demands to emerging technologies. Against this backdrop, the focus regulators in the Kingdom are bringing towards audit quality, with new frameworks, approaches and technology, is contributing to an environment where businesses are held accountable, investor confidence is optimal, and trust is maintained in the integrity of the capital market.

Muhammad Tariq
Head of Audit
E: muhammadtariq@kpmg.com

Fintech driving disruption and innovation

Saudi Arabia's fintech sector is powering ahead with more than 150 market participants already, driving digitization, delivering efficiencies through automating processes, and developing new services and applications that are transforming the banking industry.

Local start-ups have delivered innovative electronic payments and currency exchange, lending and finance, private fundraising, insurance, and business tools and information. There has been considerable innovation in mobile applications offering greater levels of convenience, personalization, and access to data-driven services.

Keen for the sector to contribute to a technology-led boost to economic growth and self-reliance, the government has set out a clear strategy set out in a Fintech Strategy Implementation Plan by the Financial Sector Development Program (FSDP). The initiative underpins a uniquely fintech-friendly environment in the Kingdom, resulting in a first wave of building out the digital economy with a focus on customer-centricity and providing enhanced convenience for end users. Here fintechs are involved in shaping tomorrow's payments systems, enabling innovation through delivering modern financial infrastructure, and supporting the data economy through applying standards and protocols.

The next wave of fintech innovation will focus on solving or supporting major global transitions such as the coming demographic impact on productivity, the low carbon economy, emerging markets integration, automation, and machine learning, unbundling of business models, to name a few. Disruptive or progressive, the innovative solutions developed by fintechs in this space will drive change across horizontal markets, industries, nations, regions, and globally.

An example is ESG or green finance, with fintech innovation holding the potential to contribute deep and lasting impact to global efforts on climate change. ESG will be the fastest growing fintech segment with a forecast of global ESG fintech deals driving a 68 percent CAGR to 2025, from US$52 billion in 2023 to US$166.7 billion in 2025.[7]

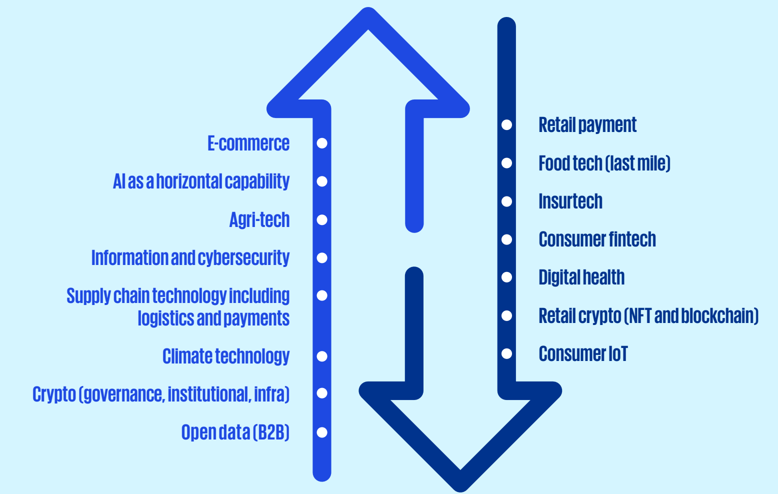
Another important area where fintechs are expanding is in enhancing the resilience of finance and financial systems, whether that's safeguarding the financial system from evolving risks, enhancing protection against cyber risks, and embracing digital regulation.

Fintech trends for 2023 and beyond

In addition to increasing investment in fintech solutions aligned to ESG principles, the banking and finance industry will witness a number of fintech-driven innovations and market impacts over the coming year.

- **B2B solutions will continue to attract solid investments** as business embraces the benefits of streamlining processes and digitization. Banks are developing solutions that offer modern payments that offer faster payment processing times, lower costs, and greater transparency than traditional methods.
- **Non-crypto blockchain-based solutions** – Applying blockchain technology in banking will bolster bank security by developing robust know-your-customer (KYC) solutions and cryptographic protection that verifies identities of users on the blockchain. Information can be easily shared across the network, while reducing the need of intermedia-ries to handle data distribution, further eliminating vulnerability. The decentralized nature of blockchain eliminates single points of failure, which also reduces the risk of data breaches. Blockchain technology will also benefit the industry in the areas of instant payments and money transfers, digital currency, and money exchange.
- **AI-driven fintech solutions and AI-based tools,** with their advanced computational and analytical capabilities, will help optimize data aggregation and usage, mitigate regulatory and market risks, improve customer experience, and combat fraud.
- **Focusing on fintech deals, investment activity** (VC, PE, and M&A) is expected to continue to grow at an estimated 30% CAGR over the next decade.[8]
- Finally, **regulators will place more scrutiny on the crypto space** while encouraging the development of money systems that better align to a stable and sustainable digital banking system.

Global investor sentiment for fintech deals is becoming more discerning.



Source: CB Insights, Pitchbook, Crunchbase, KPMG analysis

Regulators ahead of the curve

Robust policy direction and regulatory facilitation are paramount for a sector that is fast-moving and pervades many industries, verticals as well as the lives of residents. The regulators have been quick off the mark; SAMA and the Capital Market Authority (CMA) have established a supervisory and oversight framework that enables fintech startups to commercialize and expand. Also Fintech Saudi is playing a key role to develop the sector and provide a cohesive environment for new companies to flourish.

In 2019, CMA's removal of the 49 percent ownership limit for foreign investors levelled the playing field for foreign and local companies, which opened the way for foreign investors in listed companies on the Saudi stock exchange. In January 2020, SAMA launched regulations governing instant payment services and electronic money issuance, and the Council of Ministers licensed three local digital banks: Saudi Digital Bank, STC Bank and D360, with several others announced.[9]

The entrance of these digital banks is a strong indication of the dramatic and widespread changes ahead for the banking industry and the maturity of the fintech sector.

Robert Ptaszynski
Head of Digital & Innovation
E: rptaszynski@kpmg.com

Regulating open banking

The transition to open banking is part of a larger movement in the digitization of banking. Beyond the introduction of new technology, an influential driver that is having a significant impact is regulation – of the technology used, policies and processes, and the market itself.

When talking about open banking, we are generally referring to the banking practice that provides third-party financial service providers with open access to consumer banking, transaction, and other financial data using application programming interfaces (APIs). API interconnectivity provides opportunities for efficiency gains in back-end operations for banks and non-banking financial institutions, however, with that comes the need for tighter regulation not only from the banks' perspective but also in the way third-party providers (TPPs) interact with them. As a result, the expectation is that regulation will drive API design to facilitate the interplay of various actors and bank functions in order to support innovation and cohesiveness within the financial services ecosystem.

In recent times, open banking has become synonymous with general technology-enhanced customer services provision, or Banking-as-a-Service (BaaS), and hence regulators active within this area will find themselves focusing on customer-centric services, not simply the back-end and operational aspects.

Saudi Arabia's phenomenal advance in open banking

A little over two years ago, there was little open banking in Saudi Arabia. Today, the Kingdom is well-placed to take advantage of a fintech-driven open banking ecosystem. A target has been set to establish 525 Saudi-native fintech registrations by 2030, and the fintech market is predicted to grow at a CAGR of 15 percent over the next five years.[10]

Claims that Saudi Arabia is late to the game are unfounded, considering that only 30 percent of financial institutions were using APIs as of early 2021, and especially because this was partly due to incumbents facing challenges with older tech infrastructure.[11] Saudi Arabia will have no such problems. Large-scale investments in infrastructure and systems, including a cloud-grade computing backbone, coupled with substantial investment by the industry, is helping to build an advanced open banking ecosystem.

There is also something to be said for the sensibility of an initially cautious approach. Lessons can be learned from the global rush to adopt open banking. For example, digital challenger banks in Australia struggled to gain a foothold in developed market segments against mainstream banking, with three digital neo-banks ceasing operation (or independent operation).[12]

The benefits of open banking are well understood by the industry. Banks can build richer applications and enhanced financial products that complement their existing traditional services to help them increase cost efficiencies, reduce manual and operational burdens, create more customer-focused payment experiences, unlock new revenue streams, and exploit opportunities for promotion and cross-sell of products. Developers have more scope in creating new services and tools for banking consumers to manage their finances. And customers can reap the benefits of account aggregation, greater variety and speed in product applications, and more streamlined wealth management options.

Regulatory challenges facing the open banking model

It is the role of regulators to establish rules and regulations on compliance, set targets and ensure that risks are mitigated throughout the industry. In addition to operational compliance factors, other more general challenges impact open banking:

Unified strategy: SAMA is promoting a unified data strategy that leverages existing capabilities and identifies new opportunities for enhanced services. The regulator's goal is to achieve a stable and resilient open banking system based on best practice and with full protection against risk for customers and the industry.

Saudi Arabia has an opportunity to lead not only in open banking innovation, but also in the regulation of the new banking model.

Open API architecture: Open banking is dependent on the seamless access to data and the delivery of functionality served by an open API architecture. Regulators will need to ensure that TTPs seeking competitive advantage keep to the spirit of the open API architecture model, by ensuring that interoperability remains unrestricted and free from protectionist business practices.

Establishment of standards in API design: Regulation has a direct influence on initiatives in standards across API design, including endpoints, parameters and definitions as well as API design patterns such as design by role, positive assertion of truth, pre-arming, and authorization as a resource.

As open banking matures and API platforms are adopted by all participants, the influence of regulation on API design will diminish as the banking sector fully integrates into the API economy. With regulatory commitments met, APIs will eventually focus on meeting market demand, with API designs that are aligned more to tailored offerings that consumers want, as opposed to reflecting on a legislative mandate.

Data and cyber compliance: Data protection and handling regulations and cybercrime guidelines will require continual review and refreshing to protect customer privacy and security against a backdrop of a dynamic risk environment.

Customer focus: When new technology is first adopted, the customer experience can initially take a back seat. With open banking, the regulator will play an essential role in ensuring that consumers' rights are protected, that services offered are fit-for-purpose, and that new models seamlessly integrate with the existing regulatory framework. Through upholding standards in service provision and by putting the consumer at the center of regulation, customers will benefit from greater choice, convenience, and control, and the industry will be emboldened by regulation that protects and maintains trust.

Going forward

The development of open banking will enable Saudi Arabia to expand its financial services ecosystem, a vital part of its plans to become a global financial powerhouse. To achieve this, it is critical to build the regulatory infrastructure in order to pave the way for the next phase of Saudi-led innovation in open banking.

Phil Knowles
Senior Director, Financial Services
E: philknowles@kpmg.com

Industry impact of emerging open banking models

Open banking is a fast-moving, vital component of the modern banking business. With measures underway to embed open banking standards into the usual banking practices in the region, including the publication of a set of recommendations by the regulators, financial services ecosystems must prepare to embrace it.

Open banking has firmly put down roots in the global financial sector over the past few years. The open banking landscape in the GCC is highly dynamic and exciting, with Saudi financial institutions doing the spadework in compliance with SAMA's open banking framework. In the region, the Central Bank of Bahrain has been catalyzing the GCC's open banking revolution.

Open banking acts as an accelerator for banks and can be a new revenue-generating business model. This will pave way to a plethora of opportunities for the customer who has control over their data and the service provider who will design customer-centric financial products. In today's financial ecosystem, open banking as a concept, funnels into two business models.

Banking-as-a-Platform

Banking-as-a-Platform is essentially a business strategy to improve the customer base and increase the product and service offerings. Providers and consumers are connected via platform enterprises through efficient value exchanges. Such exchanges promote interaction on both supply and demand sides, thereby enhancing the networking effect. A platform involves one or more sponsors – someone to manage who participates and handles concerns like intellectual property (IP), and one or more providers – someone to provide an interface visible to producers and consumers. Both providers and sponsors play an important role in controlling a platform's openness, and how they interact has been used to classify these platforms into two dominant types of platform models:

Regardless of whether banks choose the Banking-as-a-Service or Banking-as-a-Platform model, it is critical to maintain strategic partnerships with stakeholders and engage in strengthening them.

1. **Proprietary platform (one sponsor, one provider)** This is a closed platform over which the sponsor has complete control. In the financial services industry, proprietary platforms leverage open APIs to make data available to developers and provide finished products to clients (both B2B and B2C). Banks grant developers access to their sandboxes, allowing them to experiment before releasing finished products to the public. Third parties also use APIs to consume products and construct fresh apps on top of existing products.

2. **Licensing platform (one sponsor, many providers)** This type of platform improves the network effect by utilizing a range of providers where a bank, for example, provides a white-label banking platform for both financial services and non-financial services entities, whereby these entities are able to run banking products under license by the traditional bank.

Advantages

One of the most important monetization models that banks can use in this approach is to charge a fixed fee to all listed third parties for selling their products and services through the bank's distribution network.

In addition, if the third parties are offering more complicated products or services, such as investment or insurance, banks can establish a revenue-sharing model with them.

Finally, banks can always use their open banking platform to considerably increase the client base, reduce operational expenses, and enhance efficiency, all of which will have a direct beneficial influence on their bottom line.

Banking-as-a-Service

Banking-as-a-Service is the next open banking business model that banks may implement. In this scenario, banks can charge other parties for utilizing their banking APIs while also distributing their API to a third-party provider's network. Additionally, supplementary monetization opportunities under this approach include increasing the reach and awareness, lowering operating costs, and strengthening crucial alliances.

Banking as a Service can assist fintech and non-fintech businesses in providing online banking services to their clients. Instead of concentrating on bank licenses and integrations, they should and can concentrate on improving their own core services. These user-friendly and technologically advanced products may be a better option for their customers than traditional banking. They can also develop applications for their users to track daily transactions, account balances, and savings. Aside from that, for a better customer experience, they can ensure faster access to funds and no hidden expenses.

Advantages

Open banking as a service can enable banks not only generate revenue but also save money. Banks are not required to invest in technical advancement. They can benefit from their third-party partnerships and get access to ready-made solutions. In reality, this can aid banks in future investment and profit forecasting.

Going forward

Financial institutions, consumers, technology providers, and regulators can benefit from open banking since they are all at crossroads. To achieve this, both banks and the API users must maintain a dynamic community that explores new ideas and helps turn them into actionable use cases.

One of the fundamental pillars of monetization in the open banking domain is creating and strengthening critical partnerships. Regardless of whether banks choose the banking as a service or banking as a platform model, it is critical to maintain strategic partnerships with stakeholders and engage in strengthening them.

Neo- and digital banks around the world are developing relationships with significant fintech businesses on a fee-for-service or revenue-sharing basis, so that both parties gain equally from the arrangement. Open banking has consistently strived since its inception, and today, with so many income models available, institutions are preparing for the next phase of expansion.

Fadi Al Sheikh
Head of IT Strategy, Enterprise Architecture and Technology Enablement
E: falsheikh@kpmg.com

The move to cloud is gaining momentum

The benefits of cloud computing are compelling in numerous sectors of the economy and banking is no exception. Cloud services come in various models and they eliminate not only the requirement for capital investment in physical data centers, but they also slash IT overheads in the long run.

Storage and processing power are effectively outsourced, leading to on-demand scalability coupled with stability and resilience. The benefits cascade all the way down to the customer; cloud computing is a key enabler in advancing open banking, a key innovation that will allow also Saudi Arabia's banking industry to deliver best-in-class services to its customer base.

That said, banks in the Kingdom still face two main challenges; the first is the availability of domestic cloud supply that complies with SAMA's data sovereignty regulations and the second is the quality of that supply. Local cloud providers have so far fallen short of meeting the expected demand of reliable, scalable and economical supply.

But is that soon to change? Most evidently, yes. The vigor we have witnessed in the cloud market during and following LEAP 2023 was quite exciting. A number of hyperscalers announced their plans to set up shop in the Kingdom and that is likely to be a game changer.

Hyperscalers step in, step up

We are seeing the fruits of that decision with the announcements by Microsoft, Google, IBM, Bios Middle East, in addition to Oracle's expansion, among others, to develop cloud regions throughout Saudi Arabia. These large service providers, offer computing and storage services at a massive scale, coupled with expertise, innovation, and a wide range of industry-focused solutions. What is more, they provide scalability, security, innovation, and customer-centricity along with services like fraud detection, payment services, financial data services, and hosted core banking systems.

Saudi Arabia is currently significantly more expensive in terms of cloud offerings, compared to global peers, due to a lack of competition in the market. The arrival of the hyperscalers will lead to greater competition and, eventually, downward pressure on cost. However, a cloud region typically requires a 12 to 18-month runway to full cloud accessibility and integration.

What does all this mean?

Well, there are significant implications for the entire banking and financial sector, from large to small commercial banks, capital companies and the insurance sub-sector. The increased ability to connect services between large and small players will present an opportunity for collaboration and streamlining of processes, leading to greater efficiencies.

There will be immediate and ongoing cost savings in IT infrastructure; capital investment in physical datacenters and capacity upgrades will be consigned to history. However, in the short-term there may be some costs associated with legacy infrastructure adaptation and repurposing.

A wider pool of cloud-native applications will become available, enabling innovation in services and enhanced customer experience.

Regulatory preparations for Saudi's cloud integration

Various laws and frameworks exist to ensure regulatory oversight of cloud computing as well as data hosted and stored on the cloud. These include:

- The requirement for service providers to register with the Communications, Space & Technology Commission (CST – formerly CITC) if they control data centers or other critical cloud system infrastructure hosted in Saudi Arabia.
- Banking Rules and Regulations issued by SAMA, which cover aspects such as governance, disclosure, risk management, and consumer protection.
- The Cloud Computing Regulatory Framework which sets out rules for cloud service providers and customers.
- The Open Banking Framework, which allows third-party developers to access customer data from banks with their permission.

Additionally, financial sector regulations are being tightened to accommodate migration to cloud computing (personal data protection, data handling, cybercrime etc.) For example, cloud customers will need to classify their data according to its sensitivity and comply with relevant laws and regulations regarding data protection and transfer. Data integrity will need to be protected using encryption, authentication, backup, audit, and monitoring techniques; and data will be prevented from moving to other jurisdictions through the use of contractual clauses, technical measures, and legal safeguards.

Regulatory compliance built into the cloud

While the prospect of more regulation may be daunting for some, there is a silver lining to every cloud. Enforcing Saudi Arabia's regulatory framework on cloud providers could help to reduce the regulatory burden on banks and financial institutions. Creating banking-specific landing zones or "banking hardened" installations are prime examples. The collaboration, for instance, between IBM and Bank of America has resulted in a fit-for-purpose cloud that has security, privacy and bank-specific regulatory compliance built in. The partnering resulted in a policy framework with numerous public cloud controls, architecture patterns and guidance for implementation and evidence.

Cloud hyperscalers will bring improvements in scalability, choice, and access to reliable open platforms, as well as cost efficiencies right across the financial sector.

Legacy infrastructure and ROI

The business case for migrating to cloud computing is so compelling that many banks are planning or have already embarked on their migration plans. This does, however, present a sector-wide issue of how to realize return on investment of legacy infrastructure such as datacenters and systems, especially when considering that, in most cases, a typical five-year write down will extend far beyond the migration window.

There are different approaches available to banks and financial institutions for integrating legacy systems and infrastructure with cloud computing:

Integration Legacy systems can be restructured, optimized, and connected to a cloud native environment through APIs, middleware, or adapters. Legacy applications can be modified or enhanced to leverage cloud capabilities.

Migration Legacy systems can be moved to cloud platforms with minimal changes or re-engineering. Often legacy applications can be rehosted to a cloud environment without changing their code.

Hybrid Legacy systems remain on-premises while some components or data are transferred to cloud services.

Investment in data centers will continue in the short to medium term, although the general trend will be for datacenters to shrink and cloud-based systems to expand. The expectation is that many banks and financial institutions will adopt a phased hybrid migration model to maximize and repurpose existing investments in data center infrastructure, initially migrating lower risk functions to the cloud while maintaining core, critical and higher risk business to an existing data center.

The arrival of hyperscalers, ongoing investment in cloud infrastructure, and a robust regulatory framework are all factors supporting the sector in its cloud adoption. The journey has just begun, but the sky is the limit, as they say.

Adib Kilzie
Head of CX, Cloud & Enterprise Solutions
E: akilzie@kpmg.com

Banking in the metaverse and the question of identity

In global terms, the banking sector is one of the leading industries where Web 3.0 technologies are implemented. Ultimately, with utility in the real world, Web 3.0 is also the foundation of a banking system in the metaverse.

One of the principal challenges for banks and regulators will be how individuals will interact with such banking platforms in the metaverse. For example, how banks will verify an individual's virtual identity, or avatar, with their real-world identity. The capability to prove the provenance of a virtual identity will touch every fundamental aspect of banking; without it there is little possibility of tracking identity theft from impersonation or preventing fraud.

In broad terms, there are three basic approaches to managing identity in the metaverse.

The first is to allow individuals to have multiple identities for different purposes and in different sub-domains within the Metaverse, with each of these identities verified by individual monetary system administrators. This approach would maintain an individual's privacy and security but could add complexity, and involve multiple intermediaries (and would therefore be more prone to vulnerabilities and fraud), and would be difficult to regulate.

The second is to create a decentralized identity system. For this to work, the system would have to be what's termed 'trustless', meaning it would have to be trustworthy as a standalone system distributed among many different nodes on a blockchain. With this option, a person's real-world identity could, say, be embodied within a non-fungible token (NFT) that would aggregate unique identifying components of information such as, for example, government-backed identity verification, social media attestations, biometric data, and personal attributes. No intermediaries would be involved, instead third parties, including banks, would decrypt the token to establish that someone is who they claim to be.

Proof of identity, identifiability, provenance, and trust. Without these, banking in the metaverse will not materialize.

The third is to create a global identity system, an approach that offers optimal security and privacy controls. The system would generate a real-world unique identifier that could be linked to an individual's virtual identity or identities. However, such a system would need to be universally adopted and would have to interface with the disparate array of existing identification systems used by individual nations across the world. A centralized global system would also run up against geopolitical resistance (who would govern it?) and could take decades to formulate and ratify. In which case, individual nations or consortia may resort to developing and implementing their own systems, leading to a fragmentation of monetary systems, and taking us back, full circle, to multiple identities approach.

Countries that have centralized, sophisticated identity systems in place – like Saudi Arabia – will find themselves in a favorable position to either establish their own proprietary identity system with a distributed monetary system, or they may wish to integrate into a global identity system that will either be based on a distributed, decentralized, or mixed monetary system.

Another level of complexity is the way identity will be integrated within a monetary system which may need to support a variety of fiat, digital, and crypto currencies

Technical and operational banking framework level

Web 3.0 is the process framework that will support banking in the metaverse.

- **Transactions and fiat/ crypto integration**
  The systems that facilitate the transaction of value in exchange for digital assets. In the metaverse, banking transactions may involve cryptocurrencies fiat currencies or both. Exchange mechanisms between dimensions will be required.
- **Digital assets**
  A class of intangible assets that are verifiable and ownable and include cryptocurrencies, non-fungible tokens (NFTs), native tokens, stable coins and real-world assets
- **Smart contracts**
  The use of verifiable contracts on the blockchain will enable contracts, agreements, and terms to be executed or enforced. An example is a payment to a commissioning agent on the sale of an NFT.
- **Distributed ledger (blockchain)**
  The integration of a digital, decentralized, distributed ledger that facilitate the recording of transactions, yet coexists with a proprietary banking model.

and that can be used by a payments transaction system that will operate across both real and virtual worlds. Banking in the real world uses a distributed system and intermediaries and entities that are vetted and trusted, identifiable and identified and have various rights and responsibilities. This enables one of the most fundamental aspects of banking – reversibility – which allows for transactions to be undone and is a mainstay of managing fraud and resolving, for a limited time, any issues with transactions.

Cryptocurrencies, on the other hand, use decentralized systems (although not all the time), typically on blockchain, which forgo identifying and restricting who can participate. Unlike a conventional payments transaction system, the participants in a transaction are identified only by cryptographic keys (a key is a long-string random number). A private cryptographic key allows for the creation of a public key (another random number) both of which are then used by the participants to create a public key signature which is used to action the transaction. At no time during the transaction is any participant's identity revealed which means at no point is a real-world identity associated to the transaction. How cryptocurrencies will integrate with conventional banking is not apparent; with no single identifiable third party, and no way of identifying the participants involved in the transaction, there is no way to reverse or block disallowed transactions.

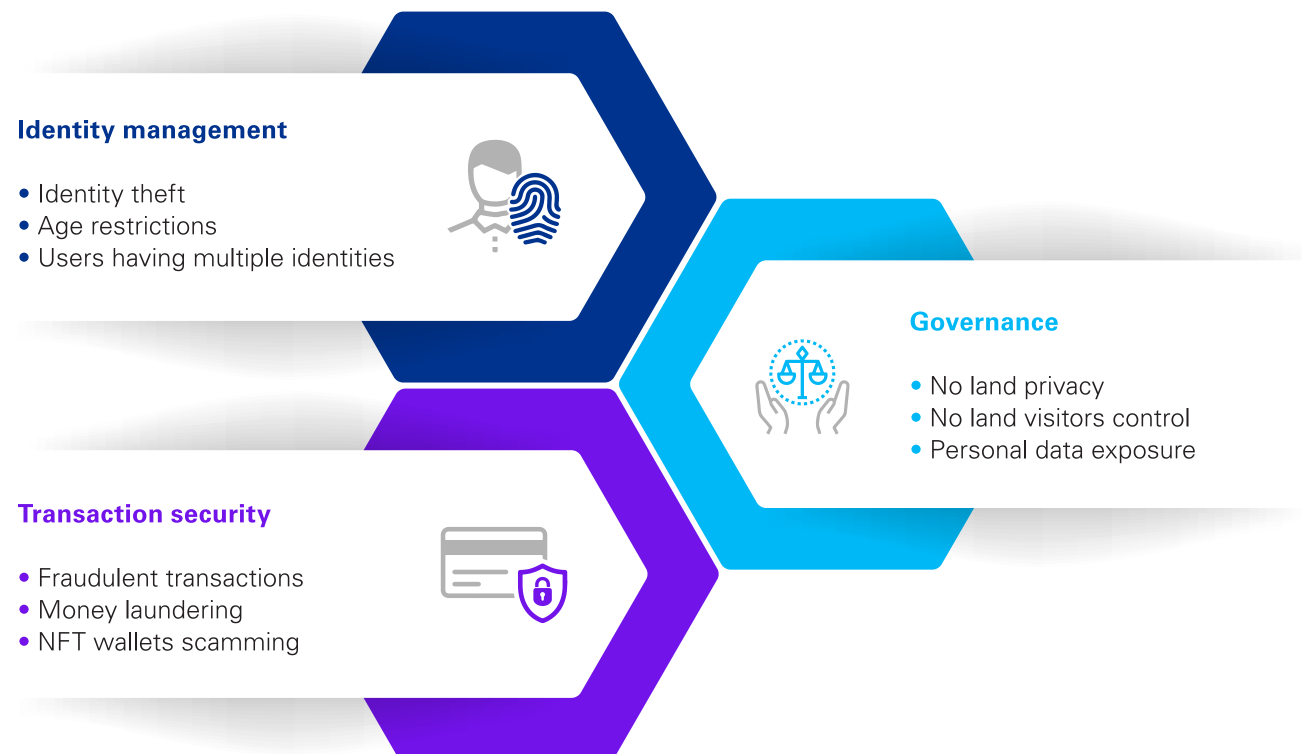
Identity management is the first of three pillars of a robust banking system in the metaverse; the other two are governance and transaction security and are at focus here. Progress is being made on all fronts and there are signs that banking in the virtual world will soon be a reality. Virtual bank branches are a next step for banks in metaverse, whereas insurance firms are expected to start providing services for digital currencies, such as NFTs, and virtual assets such as land and buildings.

What will a secure banking model look like in the metaverse?

Theoretically, there will be three tiers to the operational model. The first is the central bank which will set the regulatory framework and

Identity management – one of three pillars facilitating a robust banking model

Financial services institutions are facing elevated operational risks with a spectrum of functions when they choose to exist in the metaverse.



award licenses and certifications to operate within the virtual realm. In time, the central bank may set its own digital currency, although the preference will be to allow the market to decide for reasons that stronger, less volatile currencies, in whatever form they may take (NFT, token, stable coin), will eventually win through and dominate.

The next tier comprises the financial institutions that will establish an operating protocol that aligns with the central bank framework, typically this will be through, standardized smart contracts on the blockchain. Validity of each bank could be proven using land control verification, such as a soulbound token (a non-transferable NFT).

These help control identity management and increase the confidence that the user accessing the land is the same user who registered to it.

Once the bank is set up, a portfolio of services can be marketed and made available to avatars (customers) who have had their identities verified according to an accepted protocol. Any transfer of value will be processed by a transactional system that features strong multiple-factor authentication, the design of which will need to be determined and agreed on universally.

Lastly, the user – typically in the form of an avatar – will occupy the virtual world and interact with other avatars, retailers, and businesses as they go about their virtual lives. This will require a system of identity validation and verification between these various entities which will need to interface with the bank-owned transaction authentication system, much as it does in the real world. Finally, there will need to be some way of linking the virtual identity of the user and their transactions with the physical world, the simplest way being through a credit or debit card, or a more sophisticated way like integrating biometric authentication to digital wallets.

Setting up the identity validation, monetary and transactional systems that will enable banking in the metaverse will be a complex task with unique challenges. However, with global giants like JP Morgan and HSBC pioneering this space, banking in the metaverse isn't far away. A space to watch.

Maz Hussain
Head of Digital Lighthouse
Center of Excellence of Data Analytics, AI and Emerging Technologies
E: mazharhussain@kpmg.com

The roll-out of Basel III financial reforms

On 1 January 2023, SAMA published a circular for the implementation of Basel III final reforms, which covered the full adaptation measures for credit risk, market risk, operational risk, credit value adjustment (CVA) and leverage ratio by banks in Saudi Arabia.

SAMA has also set out the final prudential framework for Saudi banks' capital requirements to align with those Basel III final reforms and risk weights which are to be applied across all domains. These reforms conclude Basel III implementation from a regulatory standpoint, in line with the internationally agreed timeline set by the Basel Committee on Banking Supervision (BCBS), the global standard-setter for the prudential regulation of banks.

Launch objectives

Saudi Arabia is one of the few jurisdictions — and the leading country in the Middle East — that have met the official Basel III implementation date and are commencing implementing of the reforms. Under the regulatory direction and guidance of SAMA, Saudi's banks are required to start the official implementation of the Basel III final reforms starting from January 1, 2023, in line with the BCBS timelines and expectations from G20 member countries.

The Basel III final reforms aim to restore creditability in the calculation of risk-weighted assets (RWAs) by improving the sensitivity of the standardized approach used in calculating them and reducing reliance on the internal ratings-based approach, and setting a framework for comparison of the banks' capital ratios. Expanded risk coverage as a result of revised methods of the calculation are likely to have a wider impact on business models and capital allocation strategies.

The reforms also aim to complement the risk-weighted capital ratio with a revised leverage framework, which includes an uprated leverage ratio, as well as minimum outputs for calculating risk-weighted assets (output floors) which will be phased in from 1 January 2023 through 1 January 2028.

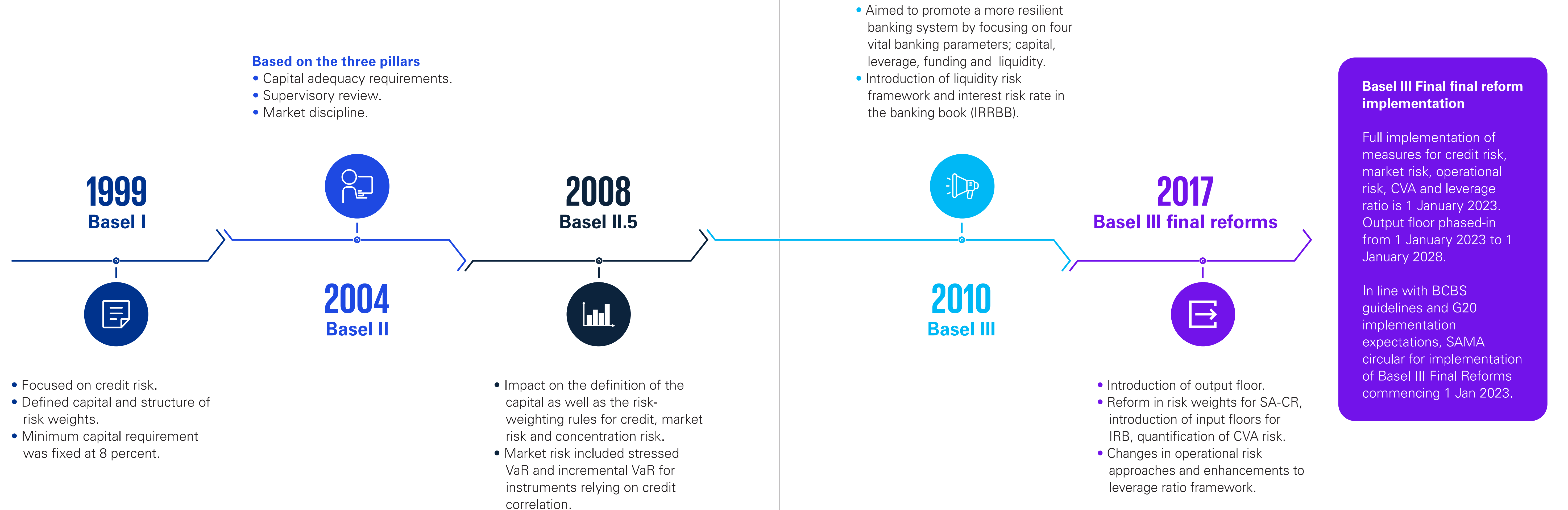
Key changes and enhancements

These are the six key focus areas affected by the reforms and the expected implications for banks:

1. Introduction of output floors
A capital floor has been set to sequentially constrain the extent to which banks can use internal models to bring capital requirements for credit and market risk below the requirements set by the standardized approaches for these types of risks. The floor will be phased in over five years, starting from 2023 at 50 percent and reaching 72.5 percent by 2028 and will apply to all Pillar 1 risk types: credit risk, market risk and operational risk.

2. Leverage ratio
An additional leverage ratio buffer has been introduced for global systemically important banks (G-SIBs) to mitigate the systemic risk to capital adequacy and is set at 50 percent of a G-SIB's higher loss-absorbency risk-based requirements. Additionally, there is a revision to the exposure definition for calculating the leverage ratio to align it with the revised credit risk framework and ensure consistency across accounting standards.

Evolution of Basel reforms



3. Changes to a standardized approach to credit risk
Revisions include making the standardized approach more risk sensitive; removing the option for banks to use internal models to calculate RWAs for some types of exposures constraining the internal models that can still be used e.g., input floors.

4. FRTB for market risk
A revised fundamental review of the trading book (FRTB) framework will bring structural change in all processes and calculation of risk-based capital requirements and market exposure for trading activities. The FRTB will require banks to make frequent holdings data available to measure fund risk using a look through (LT) approach, which assesses positions based on their underlying constituents.

5. A new approach to operational risk
The introduction of a single standardized measurement approach (SMA) for assessing operational risk replaces the use of internal models and will provide more simplicity, comparability across banks, and greater risk sensitivity compared with previous approaches. SMA is based on a combination of a simple financial statement proxy for operational risk exposure called the business indicator (BI) and bank-specific loss data.

6. CVA risk
The existing credit valuation adjustment (CVA) method has been designed to calculate the capital charge for credit risk associated with derivatives and securities financing transactions and in its place are two alternative standard approaches: a basic approach (BA-CVA) and a standardised approach (SA-CVA). The Basel reforms introduce more risk sensitivity, recalibrated risk weights, different treatment of certain hedges, and a revised boundary between the banking book and the trading book.

Potential implementation challenges

Benchmarking against global learnings, banks may face several challenges in migrating to the new Basel standards, the most significant challenges are detailed below:

- Given the official implementation timeline starts January 1, 2023, one of the most significant risks is related to inadequate readiness of all banks in the current volatile environment with respect to timely implementation and reporting of Basel III final requirements across all risk dimensions. This including carrying out the requisite changes in policies and procedures, system configurations/ enhancements, data governance as well as adopting to additional reporting complexities.

- Limited functional knowledge of implementation approaches and development of detailed methodology for implementation of enhanced Basel requirements covering all scenarios and asset classes.

- Data availability, quality and accuracy, a potential roadblock to implementation of revised methodologies under various risk areas, will require review and reconfiguration in most cases. In a few cases, a full data architecture review may be required.

- Revised requirements under standardized approaches add to system and data implementation complexities. There will be a requirement to assess the impact on banks' business and adjust business models and risk strategies accordingly.

SAMA has been instrumental in supporting banks in initiating implementation of Basel III final reforms, resulting in Saudi Arabia being the leading country in the Middle East to meet the implementation deadline in line with BCBS expectations.

- Differences in regulatory requirements of central banks across various jurisdictions with SAMA regulations, especially for banks with a high degree of interconnectedness and cross border banking operations may add to implementation reporting complexity.

- Finally, banks relying on internal models for credit and market risk will additionally have to compute capital as per the standardized approach for output floor implementation.

Implementation pathway

Recommended steps for implementation of revised standards should be supported with a structured approach, well-defined program management for knowledge transfer, and capacity enhancement.

The initial phase should involve a thorough current state assessment and evaluation to include each bank's policies and practices in identifying areas for improvement or that fall short in compliance with the new guidelines. Once completed, a roadmap to a target state can be defined for implementation.
The second phase is implementation, which can be segmented into two streams – functional and system implementation. Functional implementation involves the development of programs that install tools and processes that align with the new standards. Additionally, existing policies should be revised, enhanced, and updated. System implementation involves the creation and roll out of a roadmap for the systematic reconfiguration of the bank's systems. Further, a clean and centralized data repository across all risk types is essential for banks to make accurate risk weights, capital estimations, liquidity and leverage ratio computations and report to the regulators in the required format. Robust data architecture and reporting framework are essential for ensuring compliance with enhanced Basel requirements while keeping compliance costs in check.

Following implementation, a review stage commences which will require a periodic review and monitoring of the implementation status with respect to the revised guidelines, tools and new procedures implemented. Throughout the implementation lifecycle, the bank will need to provide ongoing support across project management, functional and technical teams to ensure that compliance with the new reforms is met.

Going forward

The additional regulatory requirements place an imperative on banks to implement and comply with all the requirements, commencing 2023. This is expected to have significant implications across strategy, capital management, risk as well as business operations.
Early adopters with a structured approach have benefitted from leveraging global learnings; banks globally are following a variety of strategies and approaches in implementing the reforms, from allocating additional responsibility onto existing staff, to the formation of new functions and departments, to the setting up of dedicated project management offices. Regardless of the approach, a structured approach incorporating technical, functional and resourcing considerations during the entire lifecycle is key to a timely and successful Basel III Final Reforms implementation.

Saudi Arabia's banks are expected to ensure full compliance and timely implementation of these reforms in line with BCBS timelines. Prior to roll-out, SAMA has also undertaken a parallel run in the second half of 2022 to ensure the initial readiness of the banking sector for official implementation while ensuring adequate and stable capital levels.

Rahul Sinha
Financial Risk Management Advisory
E: rahulsinha7@kpmg.com

Evolving personal data protection requirements

Following a one-year compliance grace period, Saudi Arabia's Personal Data Protection Law (PDPL) is now in place and coming into force on 14 September 2023, with the enforcement deadline set for 14 September 2024. The new law regulates the processing of personal data in Saudi Arabia and applies to any entity that processes personal data of individuals within the Kingdom.

The PDPL is the first comprehensive generally applicable data protection law in Saudi Arabia and shares similarities with the best practice data protection laws from around the world, such as the EU's General Data Protection Regulation (GDPR). Based on broad principles covering consent, transparency, lawfulness, and purpose limitation, the PDPL is straightforward for most companies to comply with, however, certain sectors involved in providing services that require the frequent handling of large amounts of personal data will find PDPL has a greater impact.

For the banking and financial services industry, compliance with PDPL will present additional requirements, a need for tighter internal controls, and the setting of new policies and protocols. While most requirements are administrative in nature, the PDPL does impose general obligations on data controllers (and the entity) to ensure the security, accuracy and confidentiality of personal data which can extend to IT infrastructure, systems, and policy layers.

The new law also requires the provision for expanded rights of citizens concerning their personal data and how it is managed by the bank or financial entity, which include:

Consent

The PDPL requires data controllers to obtain consent from data subjects before processing their personal data unless an exception applies.

Actionable data rights for citizens

This includes but is not limited to the right to access, right to correct, and right to delete personal data. This will require the setting up, reconfiguration and maintenance of storage and retrieval systems.

Restrictions on personal data transfer

Including transferring data outside of Saudi Arabia unless certain conditions are met. Certain types of transfer are exempt from the conditions, such as when an individual has consented to the transfer or where the transfer is necessary to fulfill an agreement.

PDPL compliance challenges

The PDPL requires companies to comply with various obligations, such as appointing a data protection officer, conducting data protection impact assessments, notifying data breaches, and obtaining prior approval for cross-border data transfers. The additional burden on individual companies will depend on their size and the current sophistication of existing data handling operations. For the banking industry, there is likely to be minimal impact in this regard, however, there will be the need for a degree of on-the-job training, along with modification, or upgrading legacy systems to ensure compliance.

Any bank processing personal data in Saudi Arabia must aim for full PDPL compliance and keep a close eye on further guidance from the regulator.

As with any new law of this kind, there will be a period of 'bedding in' where rules are assimilated, adjustments are made, and definitions are refined. Some examples where this could occur might be in differentiating between personal data and sensitive personal data; deciding what minimum data should be requested at each stage of customer interaction; and which criteria should be applied for consent and legitimate interest and when. There will be many other areas where judgement on compliance will need to be considered as the law becomes established.

Violations, penalties, and enforcement

Banks and financial institutions and companies failing to comply fully with the PDPL could receive a fine of SAR3 million (US$800,000) or imprisonment for up to two years.[1] In exceptional circumstances or where an entity persistently fails to comply, SAMA could see fit to suspend or retract banking licenses.

It is not yet clear how claims of non-compliance regarding personal data protection will be made and dealt with, however, it is likely that citizens will be directed to the Ministry of Commerce and an official reporting and complaint handling process will be established over time.

Where a data security breach is detected, under the PDPL, controllers are obliged to notify the relevant authority. The PDPL enforces penalties for disclosure or publication of sensitive personal data that can include a fine not exceeding SAR3 million and/or imprisonment for up to two years. Penalties in relation to violations regarding data transfers include a fine not exceeding SAR1 million and/or imprisonment for up to one year. For violations of other provisions of the PDPL, penalties are limited to a warning notice or a fine not exceeding SAR5 million.

Ultimately, the PDPL is designed to help protect the privacy of individuals in Saudi Arabia, and to ensure that banks processing personal data are held accountable through a system of severe penalties. More importantly, however, any bank or financial entity breaching PDPL regulations involving the collection, usage, transfer, or storage of personal data, whether intentional or not, risks reputational damage.

Ton Diemont
Head of Cybersecurity & Data Privacy
E: antondiemont@kpmg.com

Countdown to global minimum taxation

In February 2023, the OECD/G20 released technical guidance on the Inclusive Framework on BEPS to assist governments with the implementation of the landmark reform to the international tax system, which will ensure that multinational enterprises (MNEs) will be subject to a 15 percent effective minimum tax rate.[13] The framework will introduce coordinated outcomes and greater certainty for businesses as they move to apply the global minimum corporate taxs rules from the beginning of 2024.

The OECD Inclusive Framework and BEPS package of reforms

In 2016, the OECD/G20 Inclusive Framework (IF) on Base Erosion and Profit Shifting (BEPS) was established to ensure interested countries and jurisdictions could participate on an equal footing in the development of standards on BEPS-related issues while reviewing and monitoring the implementation of the OECD/G20 BEPS project.

Two pillars, one unifying global tax rate

While the BEPS 1.0 initiatives led to many changes to the international tax rules to limit profit shifting, some authorities believed that it did not adequately address the challenges of digitalization of the global economy. Many countries started to impose unilateral tax measures, including new legislation to tax companies that are active in a jurisdiction via online platforms, online sales, or via other means, with the introduction of a digital services tax.

The purpose of the BEPS 2.0 project is to consolidate these types of unilateral efforts into a consensus position, avoid double taxation and to generally address the tax challenges arising from the digitalization of the global economy. The BEPS 2.0 project also aims to ensure that multinational enterprises pay a fair share of tax wherever they operate by introducing a global minimum corporate tax rate that countries can use to protect their tax bases.

GLoBE rules for a common implementation approach

On 20 December 2021, the OECD/G20 Inclusive Framework on BEPS, involving 135 countries, released Model Rules (also referred to as the "GloBE" rules) covering both pillars — Pillar 1 establishing the right for

The below illustration highlights the key components to be considered when determining the effective tax rate (ETR) under the GloBE rules.

jurisdictions to apply taxation, and Pillar 2 establishing a global minimum corporate tax of 15 percent.[14] The adoption of the new rules is based on a ‘common approach’ which means that jurisdictions are not required to adopt the rules, but if they choose to do so, they will implement the rules consistently with the model.

The above calculation of the ETR is further complicated by the fact that the GloBE rules allow taxpayers to make certain elections (16 in total) on how these individual components are treated. Some of these elections are time bound (i.e., the taxpayer commits to treat this component the same way for the next five years). Some elections will need to be held annually and some as one-offs. Obviously, any election needs to be assessed in detail for its further implications regarding the GloBE rules.

Adoption of the OECD framework will ensure a fairer and more transparent tax environment and align Saudi Arabia with developments in international taxation.

Implications for banking industry

As a G20 member, Saudi Arabia is committed to supporting the BEPS initiative and, as such, we should expect an implementation of the Pillar 2 rules in the Kingdom in due course.

Financial services businesses will need to perform certain exercises for their impact assessments, a requirement of the OECD framework. For example, the additional tax that Pillar 2 stipulates, and with it the additional compliance burden, which will include additional resource requirements in proving the effective tax rate is greater than the minimum requirement.

Mergers and acquisitions

Medium to long-term commercial and project financing will be impacted; the future tax profile/tax cash flows of borrowers might change. There will be challenges in modeling and forecasting for preparation of M&A prospectuses. Generally, additional information will need to be disclosed on jurisdiction of entities, as well as the impact of any domestic minimum tax regimes on the global tax contingent. Companies offering M&A advisory services may need to review and amend deal structures accordingly, and account for how disposal of tax-exempt capital gains are treated.

There will also be minor changes in shareholding which are likely to place subsidiaries within the scope of IIR (e.g., >20% sales to third party). Minority shareholders might indirectly bear a portion of top up tax, and this could create further issues in apportioning indemnity cover.

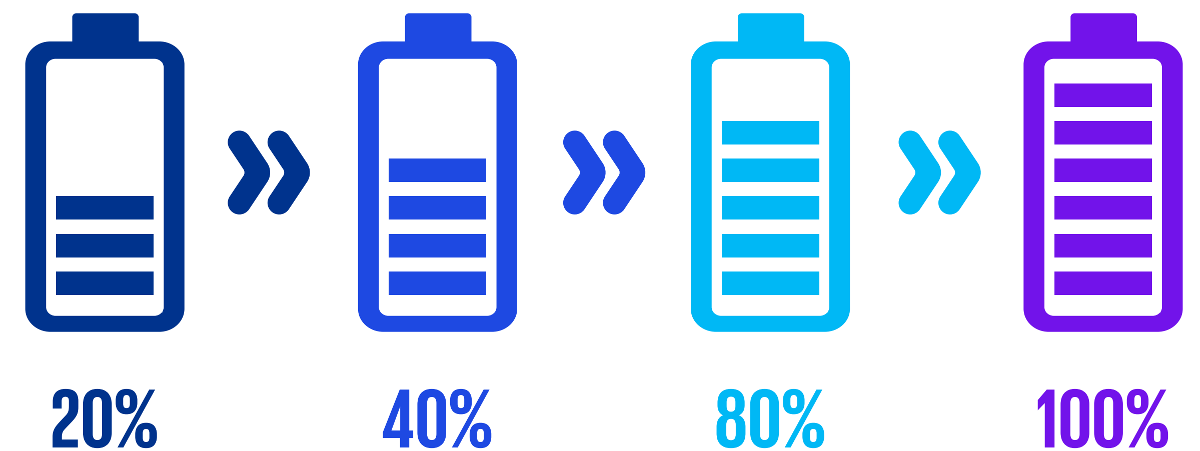
Consideration will also need to be made for convertible debt, share schemes, and joint venture arrangements. There will also be additional requirements for new M&A provisions regarding ongoing entry and exits between jurisdictions, (tax havens and low tax jurisdictions) which could extend the time it takes to complete accounts.

However, the GLoBE rules will eventually simplify group structures and financing arrangements, leading to greater transparency in M&A reporting.

Next steps

Now that the OECD framework is established, MNEs are advised to pursue implementation and integration strategies in readiness for industry-wide adoption of the landmark reform. A simplified roadmap could comprise the stages outlined in the diagram below:

Stefan El-Khouri
Head of International Tax
E: selkhouri@kpmg.com



Data requirements
What data exists, what new data is required, and where is the data held.

Process design
Design of process and solution for pillar 2 reporting and compliance

Implementation
System changes, local rules, pilot runs, and return format

Automation
Ability to extract, verify and compute data automatically

Responding to advancing financial fraud

Financial crime is on the rise, with cross-border money laundering and growth of fraud enabled by the accelerated adoption of digitalization and the ever-increasing sophistication of fraudsters blurring the line between cyber and financial crime.

The scale of the increase is demonstrated through global fraud detection and prevention market which is projected to grow from US$30.65 billion in 2022 to US$129.17 billion in 2029 (CAGR of 22.8 percent).[15]

Governments and regulatory entities around the world are responding, by enforcing robust regulation and shortening implementation timeframes. Saudi Arabia is keeping pace. In October 2022, SAMA issued its Counter-Fraud Framework to combat financial fraud in banks operating in the Kingdom.[16] This follows the issuance of instructions to all banks in April 2022 to implement several measures against financial frauds and to protect banking consumers.[17]

The framework has been developed to help banks to set up, implement, maintain, monitor, and improve effective counter-fraud controls with minimum standards for procedures and policies to prevent and detect fraud. General guidance themes include:

- Embedding fraud risk management into the bank's principal operation in the form of written policies, defined responsibilities, and on-going procedures that implement an effective program of fraud vigilance, detection, and prevention.
- Periodic assessment of the likelihood and impact of potential fraud schemes and the use of documented results to inform the design of the bank's fraud risk management program.

SAMA's Counter-Fraud Framework is a welcome initiative to tackle bank-related fraud and will help the banking industry respond to the global trend of rising financial fraud.

- Adoption of a comprehensive risk management system and system of internal controls, designed to prevent and detect fraud.
- Monitoring and reporting fraud incidents and trends, taking corrective actions as needed.

Technology is key to reducing financial crime

Effective utilization of technology is essential in the fight against fraud in the banking industry. The integration of fraud detection and protection (FDP) systems that use analytics, AI and machine learning are a critical weapon in the banking industry's armory against financial crime. According to a report by Juniper Research on online payment fraud, merchants and financial services organizations spent over US$9 billion on FDP solutions in 2022 (excluding identity theft, account takeover, or internal fraud) and the global FDP market size was estimated at US$25.66 billion in 2021.[18]

These systems use sophisticated technologies to detect and prevent fraud. AI and machine learning algorithms are trained to analyze transaction data and build profiles to identify patterns of fraudulent activity and flag suspicious transactions. Data and network analytics tools can automate and digitize data collection and analysis, combining information from multiple sources to improve the detection of anomalies or deviations in real-time and develop risk-based predictive models which can enrich and inform more accurate decision making. Predictive analytics can also be used to identify potential risks before fraud has even occurred with automated analytics utilized to detect anomalies across data entries and audit functions, providing an extra layer of detection in addition to traditional, manual selective checking techniques.

ERP systems as the cornerstone of fraud mitigation

Another technology that is assisting banks with fraud are solutions based on Enterprise Resource Planning (ERP). These solutions not only help banks to increase their efficiency, agility, and profitability, they can play a major role in tackling financial crime through:

- Providing easy access to financial data across all departments and branches.
- Extending communication and collaboration between different units and locations.
- Enabling controls and monitoring of banking processes, risks, and compliance.
- Enforcing segregation of duties with strict authorization mechanisms throughout workflows.
- Automating repetitive tasks that assist in fraud detection and prevention.
- Analyzing data for improved detection.

The human remains the weakest link

Despite all the efforts of regulators and the banking industry to shore up vulnerabilities with robust regulation, rigorous strategies, management systems and policies, and the adoption of FDP solutions, the customer remains a significant vulnerability. Fraudsters are using increasingly sophisticated psychological manipulation and techniques such as phishing, vishing, spear phishing, whaling, and business email compromise or interception. A recent addition is the growth of Authorized Push Payment (APP) fraud where the fraudster tricks the victim into willingly making an authorized transfer or payment rendering authentication ineffective. Authorized Push Payment (APP) fraud losses are on the rise and expected to climb to US$5.25 billion by 2026 (CAGR of 21 percent).[19]

Banks can partially tackle these types of fraud through monitoring transactions and behaviors for anomalies, implementing strong authentication and verification methods, and using advanced fraud detection and prevention solutions. However, novel threats remain an issue and education and awareness among customers is a necessity for the industry.

Banks should explore segmentation analysis that leverages fraud typology, victim demographics and geographic bias to assess specific vulnerabilities being exploited and target communications to customers accordingly. Targeted and tailored communication campaigns, aligned to current and emerging fraud threats, can deliver effective counter-fraud education and messaging to customers.

Muhammad Talha
Forensic Advisory
E: muhammadtalha@kpmg.com

References

[1] Saudi Giga Projects 2022 Report – Flagship projects of KSA 2030. Middle East Business Intelligence (MEED). https://buy.meed.com/product/saudi-gigaprojects-2030-vision/

[2] A Sustainable Saudi Vision - Vision 2030: https://www.vision2030.gov.sa/v2030/a-sustainable-saudi-vision/.

[3] Riyadh Voluntary Exchange Platform: https://www.arabianbusiness.com/politics-economics/467965-saudi-arabia-reveals-carbon-credits-plan-to-fight-climate-change.

[4] Saudi Arabia PIF: https://www.thenationalnews.com/business/energy/2022/10/26/saudi-arabias-pif-sells-14m-tonnes-of-carbon-credits/.

[5] Saudi Arabia Carbon Trading Platform: https://www.trade.gov/market-intelligence/saudi-arabia-carbon-trading-platform.

[6] Net Zero Banking Alliance: https://www.unepfi.org/net-zero-banking/.

[7, 8] Pulse of Fintech H2'22, Global Analysis of Investment in Fintech, KPMG International as of December 31, 2022.

[9] Saudi Arabia's newest digital bank 'D360 Bank' to go live soon (zawya.com) https://www.zawya.com/en/press-release/companies-news/saudi-arabias-newest-digital-bank-d360-bank-to-go-live-soon-aogp0nj

[10] Fintech Saudi Annual Report 21/22 https://fintechsaudi.com/wp-content/uploads/2022/11/FintechSaudi_AnnualReport_21_22E.pdf and Saudi Arabia Fintech Market Analysis - Industry Report - Trends, Size & Share, Mordor Intelligence www.mordorintelligence.com/industry-reports/saudi-arabia-fintech-market.

[11] API investments help banks stay competitive within the growing fintech ecosystem, Business Insider (15 March 2022) www.businessinsider.com/apis-are-taking-off-among-banks-2022-3.

[12] Australian lender Volt collapses in blow to 'neobank' experiment | Financial Times (ft.com).

[13] Base erosion and profit shifting - OECD BEPS. https://www.oecd.org/tax/beps/

[14] OECD releases detailed technical guidance on the Pillar Two model rules .... https://www.oecd.org/tax/beps/oecd-releases-detailed-technical-guidance-on-the-pillar-two-model-rules-for-15-percent-global-minimum-tax.htm; OECD: Pillar Two global minimum tax rules - KPMG United States. https://kpmg.com/us/en/home/insights/2023/02/tnf-oecd-administrative-guidance-implementation-pillar-two-global-minimum-tax-rules.html

[15] Fraud Detection and Prevention Market Size | Global Report, 2029. https://www.fortunebusinessinsights.com/industry-reports/fraud-detection-and-prevention-market-100231.

[16] SAMA guide to combat financial fraud in banks. https://sama.gov.sa/en-US/News/Pages/news-598.aspx.

[17] Saudi Central Bank: Updating Measures Implemented to Protect ... - SAMA. https://sama.gov.sa/en-US/News/Pages/news-753.aspx

[18] Juniper Research: Online Payment Fraud Detection Spend to Reach $9.3 Billion by 2022 | Business Wire https://www.businesswire.com/news/home/20170725005147/en/Juniper-Research-Online-Payment-Fraud-Detection-Spend.

[19] Growth in APP Scams Expected to Double by 2026 – Report by ACI Worldwide and GlobalData https://go.aciworldwide.com/rs/030-ROK-804/images/SCAMSCOPE_report.pdf.

Contacts

Ovais Shahab
Head of Financial Services
E: oshahab@kpmg.com

Khalil Ibrahim Al Sedais
Regional Managing Partner - Riyadh
E: kalsedais@kpmg.com

Mohammad Tariq
Head of Audit
E: muhammadtariq@kpmg.com

Tareq Al-Sunaid
Head of Tax
E: talsunaid@kpmg.com

Islam Albayaa
Head of Advisory
E: ialbayaa@kpmg.com

Arvind Singhi
Head of Clients & Markets
E: asinghi@kpmg.com

Contributors

Peter Bannink, Head of Marketing & Thought Leadership
Mohammed Hajar, Director, Digital Strategy
Shadi Abuserryeh, Director, Enterprise Risk Services
Farid Ahmed, Director, Financial Services
Muhammad Hasnain, Manager, Financial Services
Ahmed Shokr, Manager, Cybersecurity & Data Privacy
Pranav Sasikumar, Senior Consultant, Digital Strategy
Rosie Rich, Senior Consultant, ESG & Sustainability
Madhawi Alrajhi, Analyst, Marketing & Thought Leadership

kpmg.com/sa

Disclaimer

The financial performance results of the analyzed insurance companies comes from published financial statements of the respective firms. The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

© 2023 KPMG Professional Services, a Saudi Closed Joint Stock Company and a non-partner member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee.

The KPMG name and logo are registered trademarks or trademarks of KPMG International.