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Bracing for consolidation: The quest for scale



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Bracing for consolidation: The quest for scale

In the previous Asia-Pacific Banking Review in 2016, we wrote that the Asia-Pacific banking industry was heading into a storm. Over the past three years, the storm has worsened. There are rays of light breaking through the clouds, but only a small number of banks will climb above the storm, unlocking the potential of scale to boost productivity, optimize capital, and pursue strategic growth. Make no mistake about it, consolidation is looming on the horizon. The road ahead is difficult, and less efficient banks will disappear.

For many years Asia-Pacific's banking industry has outperformed global banking averages. Today, however, as the region's emerging economies mature, its banking industry is converging with global averages on margins, returns on equity, and price-to-book multiples. In addition, as economic growth across the region slows (especially in emerging economies) and digital attackers challenge incumbents both in customer acquisition and share of wallet, banks are grappling with thinning margins, declining asset quality, and rising capital costs. We believe that the forces sapping strength from Asia-Pacific banks point to possible consolidation, as they exert pressure on banks to achieve scale benefits in distribution, productivity, and capabilities.

As capital is drawn to organizations generating higher returns, weaker organizations may find it difficult to raise the capital they require. Smaller institutions, including new disruptors and specialists can also survive, provided that they offer superior value to niche segments. In many cases, pursuing a partnership or merger may be the most efficient way to build scale, boost productivity, and consolidate technology and talent.

To prepare for the battles ahead, banks must first attack costs and seek to achieve market-leading efficiency ratios. Those that develop best-in-class digital and analytics capabilities will also be in a position to capture significant new revenue in four fast-growing businesses: wealth management, retail lending, small and medium enterprise lending (SME), and transaction banking. As they seek to build scale, banks should also develop a systematic practice for managing partnerships, joint ventures, mergers, and acquisitions.

To emerge successfully from a period of potential consolidation, banks must reinvent themselves or risk disappearing. For many organizations, the building blocks for a data-driven, customer-centric digital banking business are already in place. In order to carry through with the transformation, however, banks must shift to a more flexible technology architecture and operating model, build up their data and analytics capabilities, and develop a plan for acquiring and developing the new talent required for the workforce of the future. High-performing banks will likely acquire smaller organizations to achieve synergies of scale, market share, technology, and talent.

The storm intensifies

In our 2016 Asia-Pacific Banking Review, we warned that a storm was brewing due to slowing macroeconomic growth, attackers, and weakening balance sheets. Three years on, these forces continue to exert pressure on the region's banks, and forward-looking indicators suggest that many banks will struggle as the storm worsens. We believe that the combination of low growth, thinning margins, possible higher risk costs, and the need for scale efficiencies point to potential consolidation. As they brace for this possibility, there are several efficiency measures and growth strategies that banks should pursue in order to maximize value. We discuss these opportunities, following our examination in the present chapter of historical trends, the future outlook, and possible consolidation in Asia-Pacific banking.

Historical trends

Growth tapering in the world's largest regional banking market

There are two ways to look at Asia-Pacific banking. On the one hand, it appears to be strong and growing. In 2018, Asia-Pacific banking generated revenues of approximately \$1.6 trillion. The region's profits (before taxes) topped \$700 billion in 2018, representing 37 percent of global banking profit pools.¹ Revenue and profit pools continue to grow, average returns on equity (ROEs) stand comfortably above the cost of capital, and total returns to shareholders for Asia-Pacific banking exceed TRS for global banking by 51 percentage points.²

On the other hand, closer scrutiny reveals a sobering situation. Multiple trends show clearly that the days of a free lunch and fast growth—especially for banks in emerging markets—are behind us. Asia-Pacific banks are facing challenges typical of mature markets—including slowing growth, thinning margins, higher capital requirements—and in many cases will need to build scale to strengthen their competitive position.

Tapering growth is the most obvious sign of a weakening environment for Asia-Pacific banking. The region's banks enjoyed double-digit annual growth from 2010 to 2014, but from 2014 to 2018, annual revenue growth slowed to five percent, and growth in profit pools slowed to three percent. While there was a slight recovery in banking profit pools in certain markets from 2017 to 2018, the longer trend of slowing GDP growth in China and India, Asia-Pacific's two largest emerging economies, has weakened economic expansion for the entire region and dampened demand for banking services. Over the same period, banks in Europe and North America have rebounded from the 2008-09 crisis, meaning that Asia-Pacific's share of global banking profit pools is shrinking (Exhibit 1).

Non-performing loans are still rising

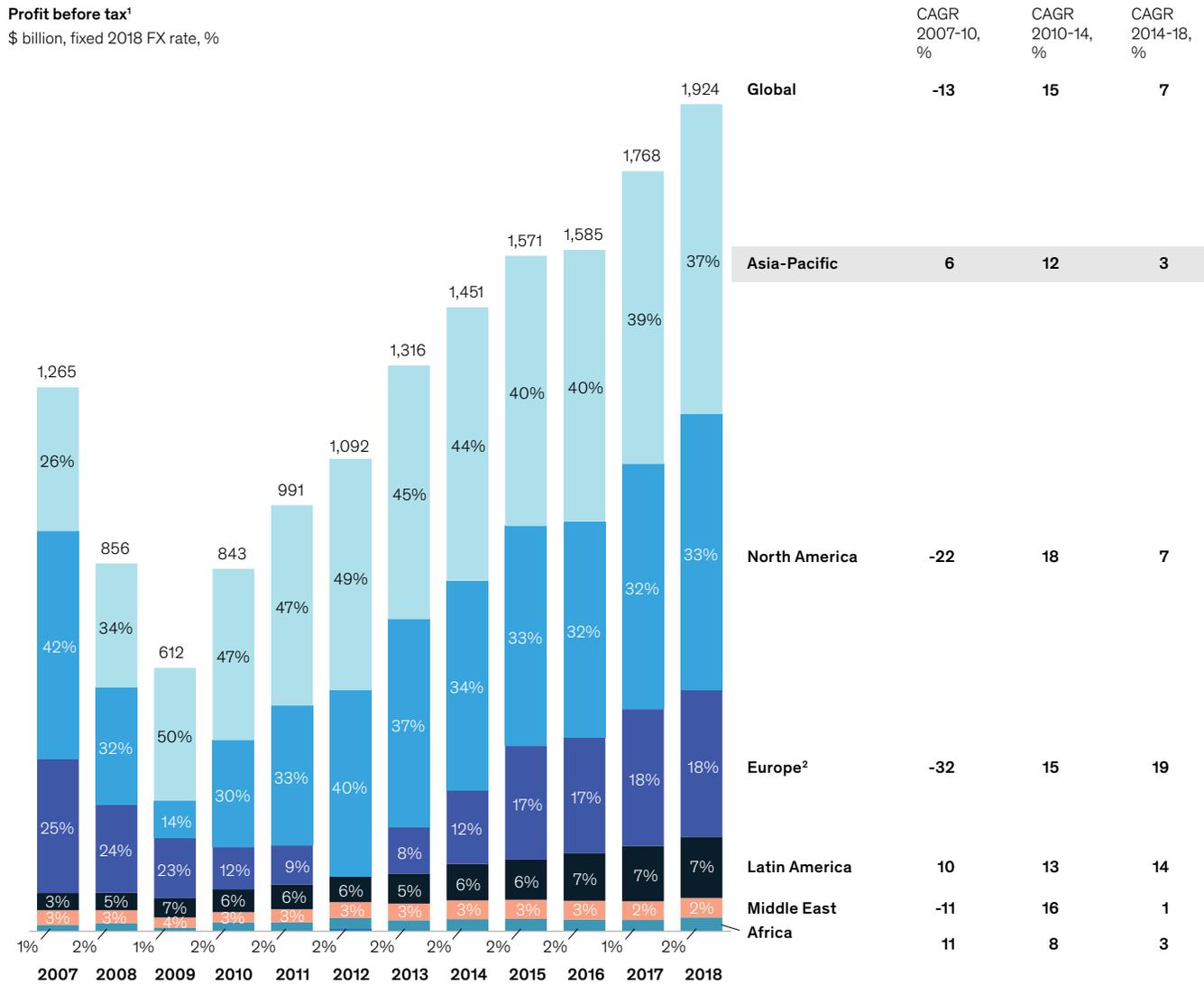
Examining the situation more closely, we see several signals that weakening industry performance is not simply a reflection of the slowing macroeconomic cycle but also results from significant changes in the market. The average risk cost provision for the Asia-Pacific market was approximately 0.30 percent

¹ McKinsey Panorama Global Banking Pools

² Based on a sample of 2,000 listed banks across markets. 2017 data from SNL, Thomson Reuters, McKinsey Panorama Global Banking Pools

Exhibit 1

Asia-Pacific's share of global banking pre-tax profit pools has declined due to slower growth and post-crisis recovery in other regions.



¹ Total pre-tax profit pools of all customer-driven banking activities, including retail and institutional management.
² Includes Western and Eastern Europe.
 Source: McKinsey Global Banking Pools

in 2018. This is the highest level of loan losses for the region since 2002, when the average risk cost provision for emerging and developed Asia-Pacific markets hit approximately 0.31 percent.

For emerging markets, the average risk cost provision spiked from 0.43 percent in 2015 to 0.49 percent in 2018.³ Non-performing loan (NPL) ratios in Thailand, Vietnam, and Indonesia are especially high, but pale in comparison with the crisis in India

(concentrated in wholesale lending by public sector banks), where NPLs accounted for 11.7 percent of loans in 2018.⁴

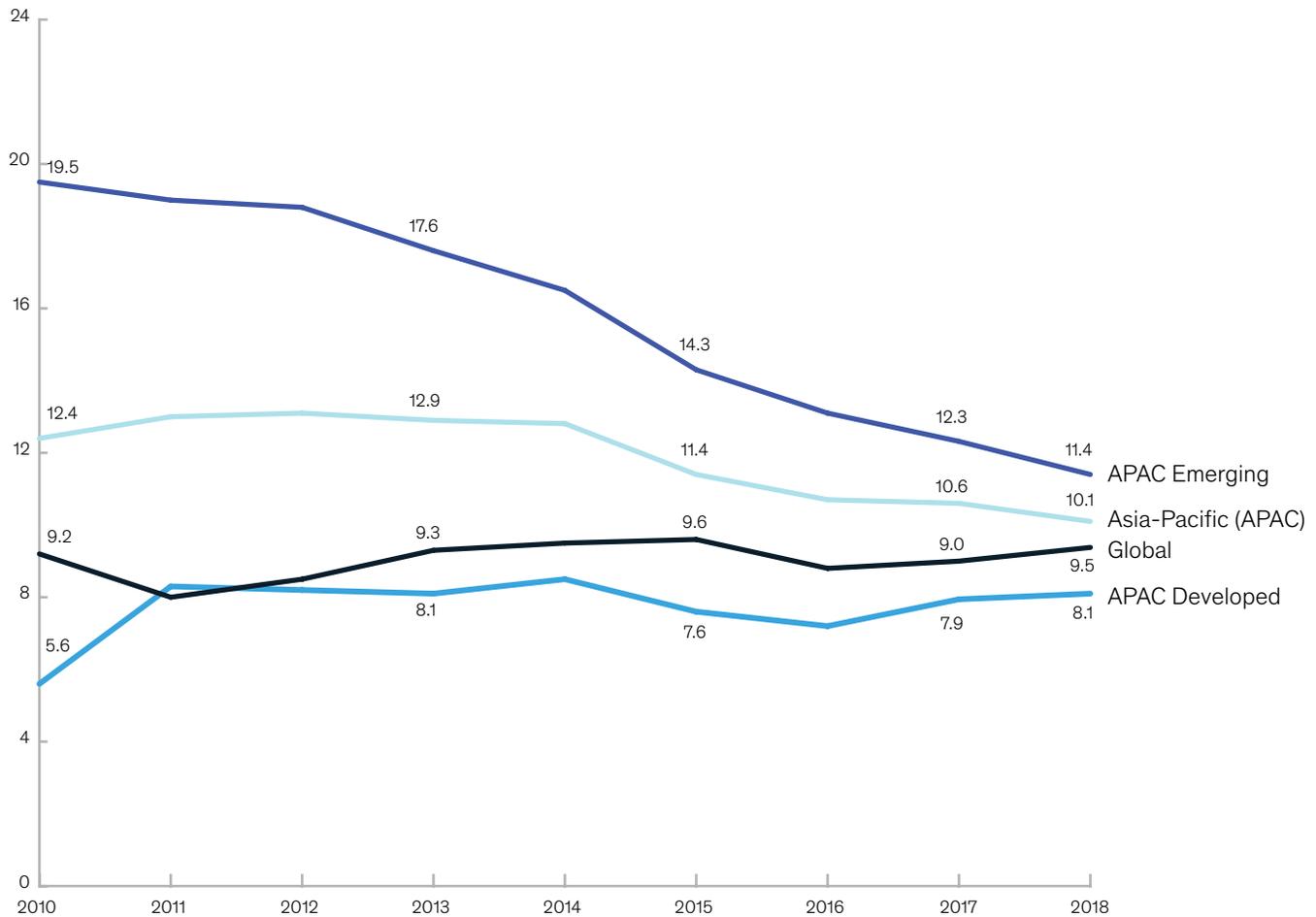
The decline in returns on equity continues

Over the past decade, the story has been the rebalancing from West to East, as growth in Asia-Pacific has driven global economic growth and generated robust returns. Now, the combination of slower growth with rising risk and capital costs in

³ McKinsey Panorama Global Banking Pools
⁴ World Bank database

Return on average equity of Asia-Pacific banking has been drifting down toward the global average.

Return on average equity, 2010-18, %



Source: SNL; McKinsey Global Banking Pools

emerging economies is creating a new equilibrium, as seen in the convergence of Asia-Pacific banking returns with global averages. The average ROE for Asia-Pacific decreased from 12.4 percent in 2010 to 10.1 percent in 2018. The average ROE for global banking was 9.5 percent in 2018 (Exhibit 2).

If rising risk costs have eroded banking ROEs significantly in emerging markets, thinning margins on fee and interest income have cut deeply into returns across developed and emerging markets alike, as banks face increasingly fierce competition from both peer banks and digital attackers. Rising capital costs (due to a combination of stricter

regulatory requirements and inefficient capital management) are another significant drag on returns (Exhibit 3). (See Appendix A for a summary of the factors behind the decline in banking ROEs across major Asia-Pacific markets.)

Improvements in cost-efficiency help, but banks can do better

While many banks have improved efficiency through infrastructure improvements and extensive digitization, among other measures, these actions have not been sufficient to reverse the general decline in ROE. In some markets, including the region's giants, China and Japan, the biggest

In most markets, the impact of lower margins has been tempered by more cost efficiency; emerging markets have struggled with rising risk costs.

ROAE for Asia-Pacific markets,¹ 2014-18, %

CAGR 2014-18 ■ Below -1% ■ Between -1% and 0% ■ Between 0% and 1% ■ Above 1%

| | ROAE 2014, % | + Margin | + Risk cost ² | + Cost efficiency ³ | + Taxes | + Fines and others ⁴ | + Capital | = ROAE 2018, ⁵ % |
|---------------------------|--------------|----------|--------------------------|--------------------------------|---------|---------------------------------|-----------|-----------------------------|
| Asia-Pacific | 12.8% | -4.9% | -2.3% | 3.2% | 1.5% | 0.0% | -0.2% | 10.1% ▼ |
| Developed markets | | | | | | | | |
| Australia | 14.6% | -2.6% | 0.7% | 1.2% | 0.6% | -0.4% | -1.3% | 12.9% ▼ |
| Hong Kong | 13.9% | -1.2% | 0.4% | 0.3% | 0.3% | 0.2% | -1.5% | 12.3% ▼ |
| Japan | 6.3% | -5.2% | 0.3% | 2.7% | 1.3% | 0.0% | 0.1% | 5.4% ▼ |
| Singapore | 11.8% | -0.8% | 0.8% | -0.1% | 0.1% | 0.0% | 0.3% | 12.1% ▲ |
| South Korea | 4.5% | -0.7% | 3.4% | 1.5% | -1.0% | -0.5% | 1.3% | 8.5% ▲ |
| Taiwan | 9.7% | -2.7% | 0.1% | 1.3% | 0.2% | -0.6% | 0.1% | 8.2% ▼ |
| Emerging markets | | | | | | | | |
| Mainland China | 17.4% | -8.0% | -3.7% | 5.5% | 2.1% | -0.1% | -0.6% | 12.4% ▼ |
| India | 11.3% | -2.9% | -14.7% | -2.9% | 6.7% | 0.5% | 0.1% | -2.0% ▼ |
| Indonesia | 17.4% | -4.6% | -1.0% | 2.8% | 0.6% | 0.0% | -2.0% | 13.2% ▼ |
| Malaysia | 12.8% | -1.9% | 0.1% | 1.0% | 0.4% | -0.1% | -1.3% | 10.9% ▼ |
| Thailand | 14.0% | 1.1% | -2.2% | -0.1% | 0.8% | 0.0% | -1.8% | 11.7% ▼ |
| Vietnam | 7.3% | 2.9% | 1.7% | -0.7% | -0.4% | -0.4% | 1.9% | 12.2% ▲ |
| Rest of APAC ⁶ | 14.2% | -6.4% | -2.1% | 2.2% | 0.1% | 0.2% | 0.8% | 9.1% ▼ |

¹ Based on a sample of 700+ banks and non-bank financial institutions in Asia.
² Loan loss provisions to average assets.
³ Operating cost to average total assets.
⁴ Includes the residual after operating expenses and taxes.
⁵ ROAE figures might not add up due to rounding.
⁶ Includes Philippines, New Zealand, Pakistan, Kazakhstan, Sri Lanka, Myanmar, Cambodia, and Laos.
 Source: SNL; McKinsey Global Banking Pools

factor behind stronger cost-to-asset (C/A) ratios has been the expansion of lending volumes.⁵ As volume growth slows, however, it will become increasingly important to leverage state-of-the-art capabilities in areas such as digitization, robotics, and machine learning to boost productivity across

diverse functions, from account opening and know-your-customer (KYC) reviews, to loan processing, customer service and other areas.

Not only has volume growth driven the improvement in productivity measures in several markets, it is also the main source of growth in bank profits

⁵ S&P Global Market Intelligence (SNL) database

throughout all Asia-Pacific markets.⁶ Profits from net interest margins and fee margins are declining, making the growth in loan and deposit volumes the last remaining stronghold for profit growth. This should give industry leaders pause. Nimble digital platform providers (armed with data-centric business models that entail relatively low capital and operating expenditures) are positioning themselves to challenge incumbent banks with increasing force. And, depending on regulators' postures toward innovation, these attackers may extend their deposit-taking and lending activities, cutting further into the market share of incumbent banks. In China, for example, Yu'e Bao, Ant Financial's digital savings vehicle, has grown from managing less than RMB 200 billion⁷ (approximately \$30 billion at today's exchange rates) in 2013 to surpassing RMB 1.1 trillion (\$160 billion) in assets under management (AuM) in 2018.^{8,9} In South Korea, messaging service KakaoTalk launched Kakao Bank in 2017 and grew to approximately eight million users and KRW 12.1 trillion (approximately \$10.4 billion) within 18 months.

For a closer examination of the threats posed by digital attackers—and banks' potential to withstand these attacks—see the sidebar “Will digital attackers gain market share at the expense of incumbents?” on page 12.

Future outlook

Asia-Pacific has entered a new phase in which growth will be much slower than in recent memory, and the potential for protracted slow growth in China could weaken the region's growth even further.¹⁰ In addition to macroeconomic headwinds, banks also face increased competition with the gradual adoption of open banking standards and will likely continue to struggle with declining returns. Investors have already registered their pessimistic outlook for the industry, and price-to-book (P/B) multiples for Asia-Pacific banking have declined from 1.1 in 2011 to 0.7 in 2018,¹¹ trailing the global average for the fourth consecutive year (Exhibit 4). Nearly two-thirds of Asia-Pacific banks have a P/B ratio less

than 1.0 and could become acquisition targets for stronger banks seeking to build scale.

Slower growth in China

Given the weakening macroeconomic environment, banks will need to plan their investments carefully and reach a new level of efficiency in order to grow faster than the broader economy. Asia-Pacific economies continue to grow, and in many markets the growth of GDP will remain comparatively strong. However, growth is slowing across most Asia-Pacific markets.¹²

Asia-Pacific is a large and complex regional economy, with some markets heavily focused on manufacturing and others more dependent on services. What many Asia-Pacific markets have in common, however, is significant dependence on trade with China. This trade accounts for seven percent of South Korea's economic output, 14 percent of GDP in Malaysia, and 35 percent in Vietnam. As the market generating half of banking revenues in the Asia-Pacific and 78 percent of growth in the region's banking profit pools between 2010 and 2018, the tapering of China's real GDP growth, from 7.9 percent in 2012 to 6.7 percent in 2018 will contribute to weakening demand for banking services across the region.

Trade friction between the US and China could potentially weaken the pace of growth in Asia-Pacific markets that are strongly linked to China's economy. However, a stronger emphasis on domestic trade within China could mitigate the negative impact of trade tariffs on China's growth, and some markets in the region may benefit as US companies seek alternative trading partners.

The rapid expansion of China's real-estate sector is another source of concern, as a collapse in real estate prices could threaten the stability of the Chinese banking system and ripple across the region.¹³ The Chinese government's efforts to reduce the role of shadow banking are expected to yield systemic benefits over the long term. In the short term, however, effects may include restriction

⁶ McKinsey Panorama Global Banking Pools

⁷ Wind Database

⁸ “Meet the earth's largest money-market fund,” Wall Street Journal, September 13, 2017, <https://www.wsj.com/articles/how-an-alibaba-spinoff-created-the-worlds-largest-money-market-fund-1505295000>

⁹ “Money market funds on Ant Financial's Yu'e Bao grew by 80 times on average,” China Knowledge, March 27, 2019, <https://www.chinaknowledge.com/News/DetailNews/86005/ant-financial-money-market-fund>

¹⁰ IMF Economic Outlook, April 2019

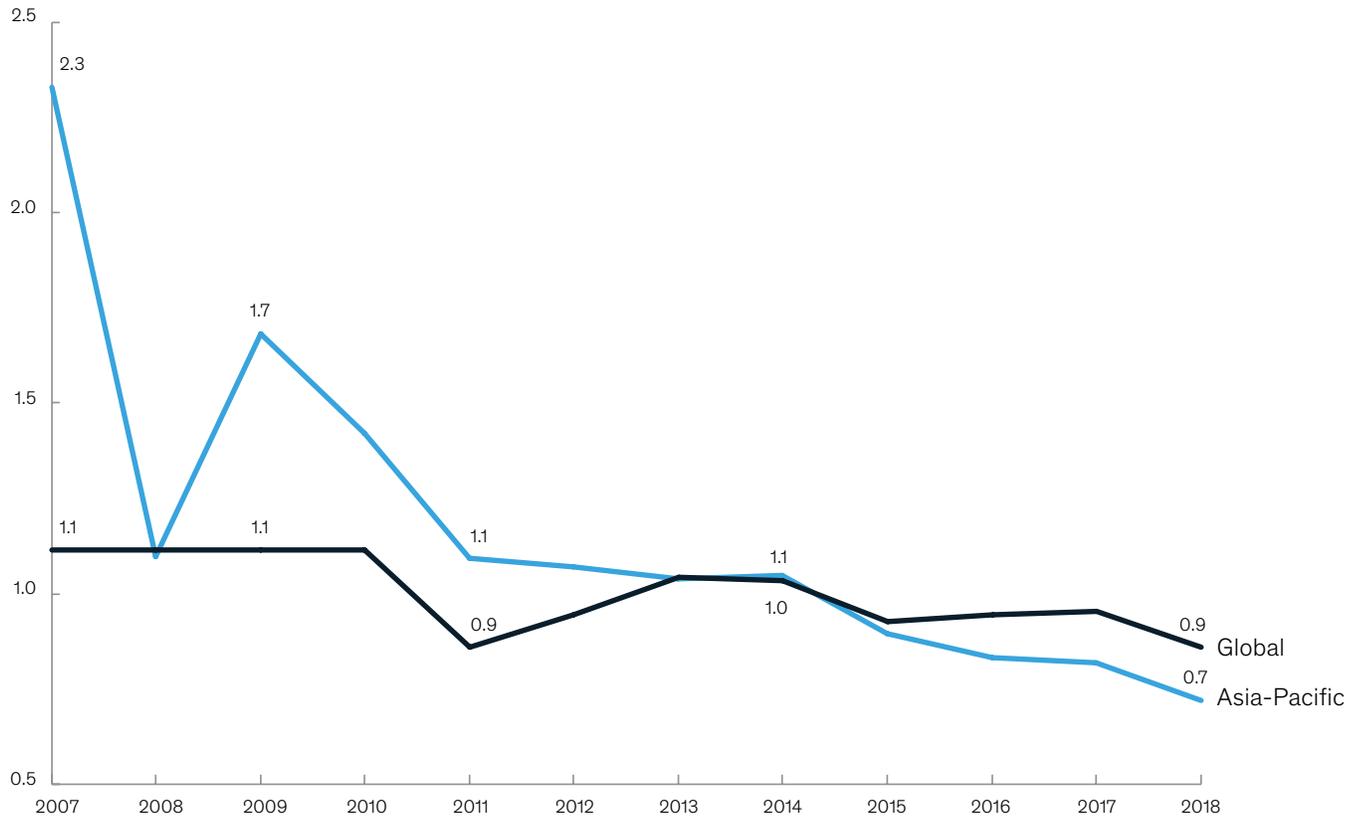
¹¹ S&P Global Market Intelligence (SNL) database

¹² World Bank Open Data

¹³ “China's leaders fret over debts lurking in shadow banking system,” Reuters, December 28, 2017, <https://www.reuters.com/investigates/special-report/china-risk-shadowbanking/>

Banks’ price-to-book multiples have declined, reflecting investors’ negative expectations.

Price-to-book multiples,¹ 2007-18



¹ Based on a sample of 2,000 listed banks across markets.
 Note: Book value does not exclude goodwill as the data is available only for approximately 60 percent of covered banks.
 Source: SNL; McKinsey Global Banking Pools

of the growth of private companies, which contribute significantly both to job creation and China’s economic expansion.¹⁴

The trend toward open banking

Aiming to speed up innovation and modernization through competition, regulators across Asia-Pacific are gradually opening up banking systems to broader participation.¹⁵ India now allows non-bank payments services providers to connect directly to its new infrastructure, the United Payments

Interface (UPI), and Australia has also mandated that its four largest banks adopt open banking standards for a broad range of transactions.¹⁶ Hong Kong and Singapore are both issuing virtual banking licenses in an effort to spur innovation and to create greater efficiencies and resiliency within the banking system.^{17,18}

Whether regulatory efforts to encourage open banking lead to more direct competition or voluntary collaboration between banks and non-banks,

¹⁴ “Why banks are wary of Beijing pleas to back private companies,” *Financial Times*, February 20, 2019, <https://www.ft.com/content/aedef990-335b-11e9-bd3a-8b2a211d90d5>
¹⁵ Open banking regulations vary in the degree to which they focus on data sharing (as in the UK); pricing, third-party access to banking systems, and authentication (as in the EU); or risk control and interoperability (as in Singapore). In general, however, various open banking regimes are part of a global trend in bank regulation emphasizing security, innovation, and market competition. Please see “PSD2: Taking advantage of the open banking disruption,” McKinsey.com, January 2018.
¹⁶ “Australia to force ‘big four’ to open banking data by 2019,” ZDNet, May 10, 2018, <https://www.zdnet.com/article/australia-to-force-big-four-to-open-banking-data-by-july-2019/>
¹⁷ <https://www.scmp.com/business/article/3009574/hong-kong-issues-four-more-virtual-bank-licenses-spur-innovation-and>
¹⁸ https://www.straitstimes.com/business/singapore-to-allow-virtual-banks-mas-issuing-up-to-five-new-digital-bank-licenses-tharman?xtor=CS3-18&utm_source=STiPhone&utm_medium=share&utm_term=2019-06-28%2019%3A06%3A51

mounting competition between traditional banks and digital innovators will almost surely cut even deeper into bank margins in coming years. New entrants will find avenues to introduce highly relevant services, with an unprecedented level of ease and convenience and low pricing. Some of these attackers may obtain banking licenses for start-ups; others will partner with a newly licensed digital bank or invest in an incumbent bank. In either case, disruption will continue to erode bank margins—it remains to be seen how fast returns will decline.

The decline in ROEs will continue unless banks or investors take action

We estimate if that regulators maintain a cautious posture toward non-bank innovators during a period of weak growth, banking ROEs in Asia-Pacific could decline to 9.8 percent by 2023. However, if low-cost digital-first banks can build scale rapidly and take significant market share from incumbents, ROE could drop to 6.4 percent in 2023. (For more on our estimates for banking ROEs in various Asia-Pacific markets, see Appendix B, page 36.)

We also estimate that a rigorous industry-wide effort to optimize operations, risk, and capital costs could reverse the decline in returns, potentially pushing industry ROE for Asia-Pacific up to 12.1 percent by 2023 (see Exhibit C, page 37). More than 60 percent of Asia-Pacific banks have ROEs below the cost of equity (COE). Banks that fail to improve productivity, optimize capital consumption, and revitalize revenue growth may see their ROE drop below the cost of capital, leading, in turn, to efforts to restructure portfolios or seek a merger partner.

Wide variation in capital levels suggests inefficient allocation

On a brighter note, banks' capital levels are generally adequate across Asia-Pacific. The average Tier-1 capital ratio for Asia-Pacific markets has risen from approximately 11.2 percent in 2010 to approximately 12.8 percent in 2018.^{19,20} The timing and level of Basel III implementation are still not clear for many markets;²¹ however, we anticipate that most large banks in Asia-Pacific will be required to hold capital equivalent to 12.5 percent of risk-weighted assets (adding the regulator's surcharge of two percent to the Basel recommendation of 10.5 percent).

While Asia-Pacific banks may hold a strong reserve of capital as an industry, many are not putting it to good use. The average return on risk-weighted assets (RoRWA) across the region was 1.5 percent in 2018, but profitability varied widely. For example, banks in Australia, Hong Kong, and Indonesia earned above 2.5 percent RoRWA in 2018. Earning 1.6 percent RoRWA in 2018, Chinese banks performed slightly above the overall Asia-Pacific average.²²

If bank capitalization in Asia-Pacific markets is on average sufficient to satisfy regulatory requirements, the region's banks maintain significantly lower ratios than banks in Western Europe and Eastern Europe, Middle East, and Africa (EEMA), where the average Tier-1 capital ratios in 2018 were 15.6 percent and 14.6 percent, respectively. The lower capitalization of Asia-Pacific banks, combined with the fact that within markets capital levels vary quite widely from bank to bank, point to the opportunity for consolidation. More specifically, the wide dispersion of capital ratios signals, first, that poorly capitalized banks may become acquisition targets, and, second, that banks significantly above the market average are not deploying capital efficiently and, consequently, could potentially either acquire another bank (as they are awash in cash) or be acquired (due to their extraordinary inefficiency). Put more simply, capital will ultimately flow toward organizations offering optimal returns.

Scale matters more than ever

Asia-Pacific banks with greater scale have typically generated higher returns. Across select Asia-Pacific markets, there is a wide difference in the ROEs of the largest and smallest banks, ranging from 140 bps to 700 bps (see Exhibit 6). The wide dispersion in ROE shows that scale really does matter. For example, in Australia, the four largest banks handle practically all mortgage lending, which not only represents a large share of total bank assets in the market but has also become even more profitable with the adoption of high-powered credit underwriting models (Exhibit 5).

But how far can a bank go by adding scale? Historically, there has been a limit to how big

¹⁹ McKinsey Panorama Global Banking Pools

²⁰ S&P Global Market Intelligence (SNL) database

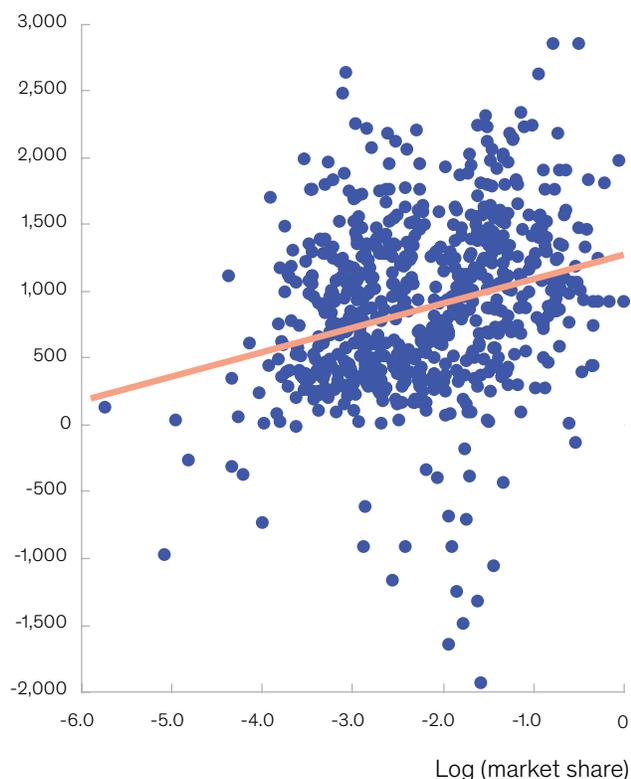
²¹ "Fourteenth progress report on adoption of the Basel regulatory framework," Basel Committee on Banking Supervision, April 2018, <https://www.bis.org/bcbs/publ/d440.pdf>

²² S&P Global Market Intelligence (SNL) database

Exhibit 5

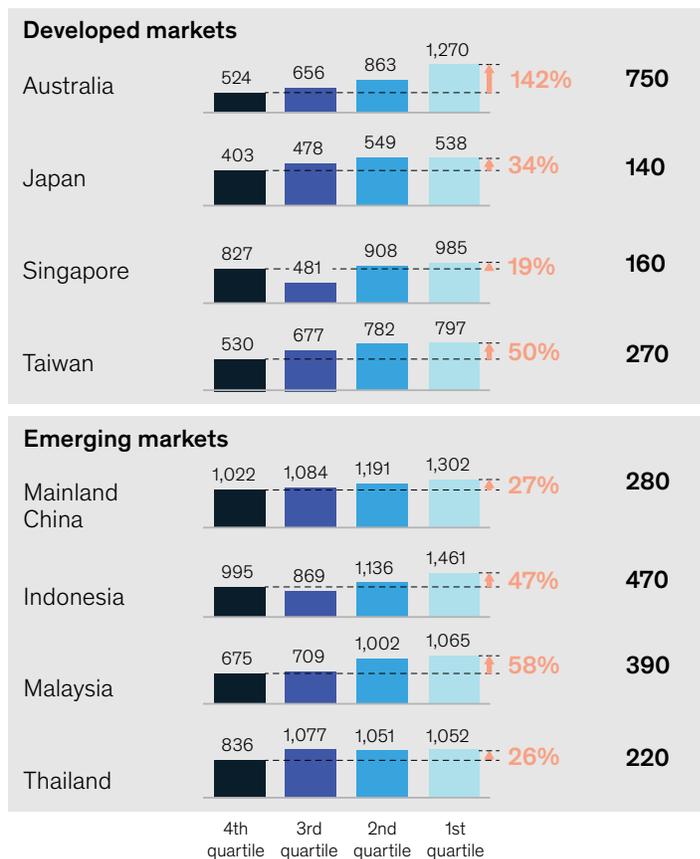
Across Asia-Pacific, banks with greater scale tend to have better returns on equity.

Return on average equity, 2017, bps^{1,2}



ROAE by market share,³ examples, bps

1st/4th quartile, %
1st & 4th quartile delta, ROAE, bps



¹ Linear regression based on the sample of more than 500 banks in Asia.
² ROAE delta between lowest and highest quartile for overall Asia is ~269 bps.
³ Quartile by market share (i.e., 1st quartile includes top 25% banks with largest market share).
 Source: SNL; McKinsey Global Banking Pools

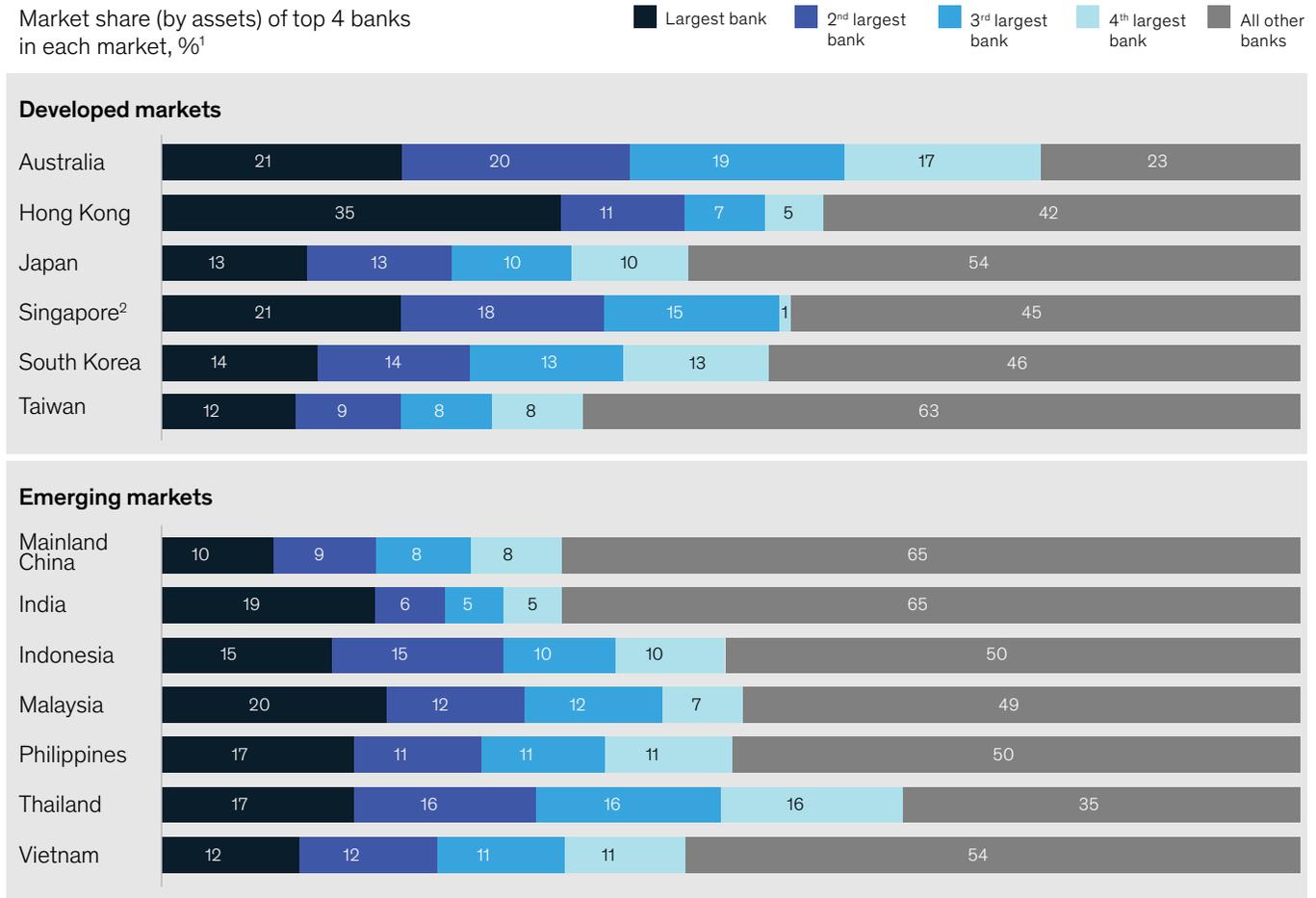
an operation could become and still reap scale efficiencies. This has changed, however. Innovations in machine learning, artificial intelligence, and robotics have lifted this limit, launching a new wave in productivity. Scale is back on the agenda, even for the largest, most efficient organizations.²³

In certain Asia-Pacific markets, new regulations aiming for higher efficiency, stronger risk management, better choices for customers, and capital controls have an indirect impact on consolidation, as the new regulations pose special challenges for smaller, less-efficient banks.²⁴

Without drastic measures to cut the fat, build muscle, and develop a superior offering, these banks will likely disappear as larger, highly efficient banks seek greater scale to ride the new wave of productivity. As well-capitalized banks with strong market valuations explore their options for improving productivity, many will likely seek to acquire less efficient and poorly capitalized banks. Several banks in the region have already completed multiple transactions, but we have yet to see the emergence of a strategic and programmatic approach to mergers and acquisitions.

²³ "Rewriting the rules: Succeeding in the new retail banking landscape," McKinsey.com, February 2019
²⁴ There are also global regulations (e.g., FRTB, BCBS 239) aiming to strengthen risk management and governance. These impact global banks directly; however, regional and smaller national banks could implement these standards voluntarily in order to remain competitive internationally.

Market share split across Asia-Pacific suggests varying potential for consolidation across markets.



¹ 2018 estimates with limitations of consolidated reporting, which may include non-domestic geographies for certain regional banks.

² Total market includes internal and external assets of banks in both domestic banking units and Asian currency units.
Source: SNL

Consolidation on the horizon

The combination of slowing growth, increasing competition, and the potential for further increases in risk costs creates a perfect storm in which banks will be severely challenged to reverse the decline in ROE. A number of developments, including a distressed bank seeking a merger or a trend of bank failures due to a sharp rise in loan losses, could push the industry toward a new investment structure. We expect, however, that the most likely move toward consolidation will come from well-capitalized banks seeking synergies in areas such as market growth, technology, and talent.

Compared to the US and various European markets, some Asia-Pacific banking markets are already

consolidated to a certain degree. Even in highly consolidated markets, however, there is room for highly efficient and well-capitalized organizations to strengthen market leadership through a merger or acquisition (Exhibit 6). In addition, as noted above, the disparity between banks priced at multiples that reflect capital strength and those that display weakness is currently at its peak, suggesting fertile ground for mergers and acquisitions.

As capital shifts toward organizations generating higher returns, banks that achieve market-leading productivity will compete aggressively with both regional and global banks, as well as digital giants. While the biggest banks will increase their market share, there will always be a role for smaller

institutions offering, for example, high-touch banking and investments for high-net-worth (HNW) individuals and small and medium-size businesses (SMEs) or a highly efficient everyday banking proposition for under-served market segments. We expect that the imperative to create value will result in clearer choices for customers. Unprofitable, sub-scale banks that are poorly capitalized will disappear.

The situation will be different across markets, with some markets moving faster toward consolidation, depending on the number of competitors, the degree of variation in performance, the level of loan losses, capital requirements, regulatory changes, and other factors. There is considerably less room for consolidation in Hong Kong, Singapore, and Australia, but some banks, nonetheless, may seek synergies through a merger or acquisition. In markets with a moderate level of consolidation, the largest banks may target smaller organizations.

Most M&A activity will occur within markets, but cross-border deals could increase as banks seek to enter a new market or exit markets where they cannot compete (Exhibit 6).

Asia-Pacific is a tough environment for banks, and it's going to get tougher, as slowing growth, rising NPLs, and the erosion of margins continue pushing ROEs downward. Asia-Pacific banking is on the brink of consolidation, and banks need to urgently redouble their efforts to boost productivity, optimize capital, and pursue strategic growth. Bracing for consolidation will get banks in shape to forge ahead through the storm.

Will digital attackers gain market share at the expense of incumbents?

Having built scale and captured market share in their home markets, digital giants like Alibaba, Amazon, Google, Ping An, and Tencent are seeking to do the same throughout Asia-Pacific, increasing their investments as consumers from India to Japan to Malaysia turn to digital channels for retail purchases—both online and offline.

These moves pose significant threats for incumbent banks, as these attackers have momentum in scaling innovative business models centered on data-collection and the application of advanced analytics to identify new revenue opportunities and make smart lending decisions. Over the past decade, these giants (which can also be described as ecosystem builders and orchestrators) have successfully embedded banking functions as frictionless elements designed to accelerate spending on their platforms, some of which are focused on e-commerce or social networking, others on areas including gaming and digital entertainment, travel, health, and home-buying.

This model has been immensely successful. In China, digital commerce now accounts for more than 20 percent of total retail sales, with Ant Financial and Tencent handling more than 90 percent of digital payments transactions. Incumbent banks have not only lost market share, but are also missing out on the valuable customer data generated through digital interactions, as well as contending with rising customer expectations and increasing pressure on margins.

However, regulators are vigilant. If attackers have reaped success in targeted areas (digital payments, lending, investments) within a short period of time, they have yet to prove their mettle through the full credit cycle. What is more, it will be difficult for attackers to again leapfrog the banking system with an entirely new operating model and value proposition, particularly as economic growth is slowing across Asia-Pacific and banks in many emerging markets are already plugged into payments infrastructures that give them the foundation to extend their own digital offerings across broad geographies.

The fact is, however, that the gradual shift toward open banking, whether through regulatory mandates, as in Australia and Japan, or through the opening of payments infrastructures to non-banks—as with India's UPI (United Payments Interface) and as foreseen in the Payment Services Bill in Singapore—raises serious competitive threats for banks. In markets where banks lag in digital innovation or where a large population of unbanked/underbanked consumers is spread across a broad geography, a telecommunications company may win customers by offering mobile money or microfinance services. Alternatively, a messaging platform may offer digital payments—and eventually lending—to millions of network users.

The contest for market share may hinge ultimately on how effectively incumbents adapt to the new rules and use their inherent strengths to defeat the attackers. Attackers play a valuable role in exposing weaknesses and gaps in diverse banking markets. If banks take note, they can apply these lessons in their home markets, where they have the advantage of scale based on longstanding, trust-based relationships and strong, stable balance sheets capable of withstanding multiple credit cycles. In addition, no organization can rival banks on historical customer data, which enables banks to analyze how customer behaviors and preferences evolve over the course of a lifetime. In order to emerge at the top of a broader and more diverse set of bank and non-bank competitors, incumbents need to develop data-intensive business models and acquire the technology and talent required to execute the strategy.

Assuming the mantle of attacker bank may be the best way an incumbent can preserve hard-won relationships, extend market share, and strengthen the bank brand as trusted advisor. But the bank must be prepared to move fast. In order to neutralize an emerging competitive threat promptly, a bank can speed up technology delivery by partnering with a fintech innovator. In addition, partnering with an ecosystem player can be an effective way to build scale rapidly, securing both market share and access to data. Indeed, some banks may find that their most serious challenge comes from an all-digital offering backed by an incumbent bank partnered with a fintech innovator or a digital giant.

Climbing above the clouds

As the storm rages on, the further decline in ROEs for Asia-Pacific banks could soon become unsustainable. To weather the storm, banks must act fast to improve cost efficiency and capture pockets of growth. To emerge strong and well-fortified for the battles ahead, banks will need to achieve market-leading productivity, attacking costs while also building scale through a combination of organic and inorganic growth. In this chapter we examine the steps that banks can take to boost productivity, strengthen risk management, and optimize their use of capital. Banks that develop best-in-class digital and analytics capabilities will also have the potential to capture significant new revenue in four fast-growing businesses: wealth management, retail lending, SME lending, and transaction banking. Finally, banks should develop a systematic practice for managing partnerships, joint ventures, and M&A as a means to create synergies in scale, market share, technology, and talent.

Strengthen the core to maximize the impact on ROE

Banks are continuing their efforts to increase productivity, but these measures have been at best incremental and in many cases inadequately coordinated. Now is the time for banks to make bold, enterprise-wide moves, leveraging digitization, data, and partnerships to transform their business model and restore growth to ROE.

Productivity

Most banks have already undertaken multiple iterations of lean process improvement, and more recently many have squeezed an additional 10 to 15 percent out of costs, using zero-based budgeting models to pinpoint with a high level of granularity variances between actual and budgeted costs. Asia-Pacific banks, however, still lag behind banks in other regions both in terms of their current

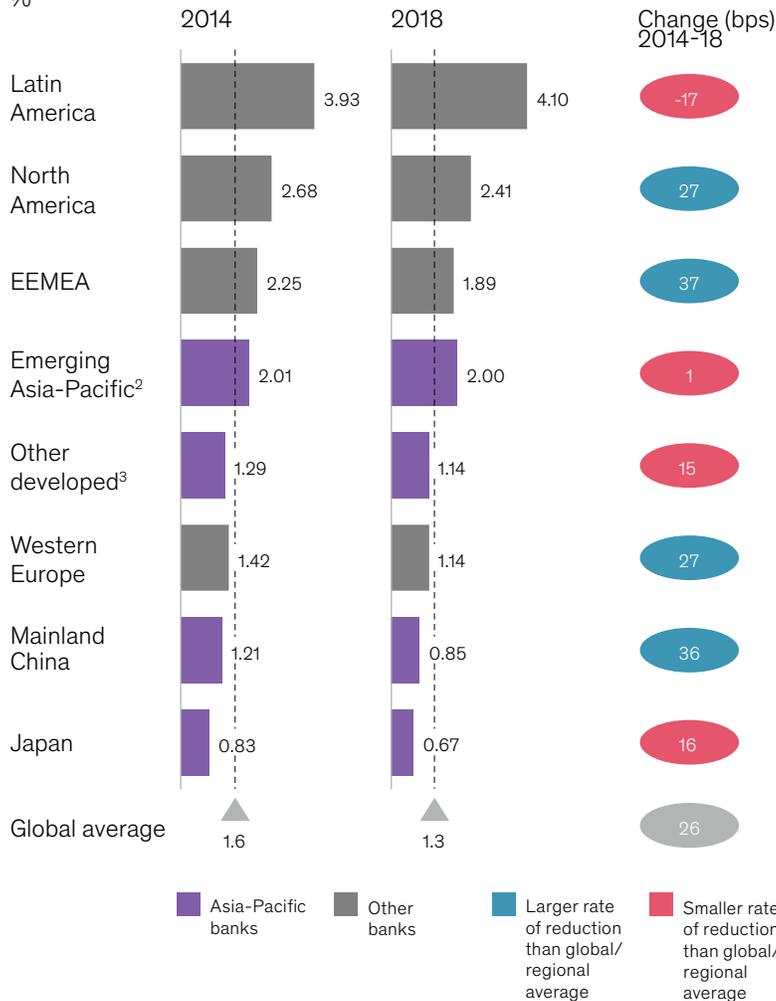
efficiency levels and improvements in recent years. What is more, several markets (e.g., Australia and Indonesia) show a wider variation in performance, suggesting that low performers in these markets have significant opportunity to lift productivity (Exhibit 7, next page).

Recent innovations in automation, artificial intelligence, and advanced analytics are creating a new wave of productivity gains, offering banks the opportunity to reduce operating costs by between 30 and 40 percent across sales and service activities, support functions, and back-office production, which typically account for 85 percent of operating expenses. These innovative and adaptable technologies are changing fundamentally the way work is done in front-, middle- and back-office operations. ANZ, for example, has fully automated mortgage payments by developing robotic process automation (RPA) software to

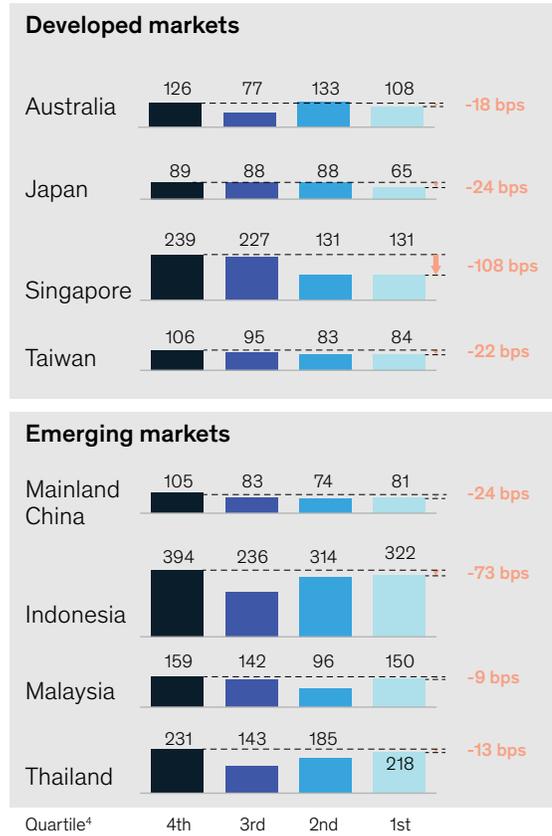
Exhibit 7

Asia-Pacific banks are in the middle of the pack in terms of productivity; and those with greater scale perform better.

Cost/asset ratios,¹ by region,
%



Cost/asset selected examples,
bps



¹ Based on a sample of 2,000 banks across markets.

² Includes Bangladesh, India, Indonesia, Kazakhstan, Malaysia, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam.

³ Includes Australia, Hong Kong, New Zealand, Singapore, South Korea, and Taiwan.

⁴ Quartile by market share (i.e., 1st quartile includes top 25% banks with largest market share).

Source: SNL; McKinsey Global Banking Pools

handle transactions and update accounts.²⁷ HSBC is using optical character recognition and robotics to automate document processing in trade finance,²⁸ and ICICI Bank has developed a chatbot that handles approximately one million queries each month.²⁹

Several banks are also deploying high-powered machine-learning algorithms to reduce manual labor and increase accuracy in support functions, including fraud prevention, KYC reviews, loan processing, and credit underwriting, among others.

²⁷ "Rise of the machines as ANZ brings in robot workers to do the 'boring' jobs," The Australian Financial Review, 25 August 2015, <https://www.afr.com/technology/rise-of-the-machines-as-anz-brings-in-robot-workers-to-do-the-boring-jobs-20150820-gj3fp6>
²⁸ "HSBC uses IBM to automate the processing of 100 million document pages," Computer Weekly, April 11, 2017, <https://www.computerweekly.com/news/450424297/HSBC-uses-IBM-to-automate-the-processing-of-100-million-document-pages>
²⁹ "ICICI Bank's AI chatbot iPal empowers customers with information and financial services," CIO, October 17, 2017, <https://cio.economictimes.indiatimes.com/news/enterprise-services-and-applications/icici-banks-ai-chatbot-ipal-empowers-customers-with-information-and-financial-services/61118452>

Prioritize digital delivery

With adoption ranging from 58 percent in Indonesia to 99 percent in South Korea, digital banking is well established in Asia-Pacific, enabling banks to reach new geographies and under-served market segments. However, many customers still prefer to visit a bank branch for more complex services. The challenge now is to create a digital experience that draws more traffic away from branches to mobile and online channels. Customers of China Merchants Bank (CMB), for example, conducted approximately 75 percent of their branch business through digital kiosks in 2017,³⁰ significantly reducing the staffing levels required to maintain a branch. The expense for signing up new customers for digital banking are 40 to 50 percent lower than for new branch-based relationships.

Not only are the operating costs for digital banking as much as 67 percent lower than traditional branch-based service, but digital customers can generate twice as much revenue. One reason for this is that retail customers' interactions with the bank via digital channels are 16 times more frequent than branch-based interactions. Another reason is the enhanced marketing and cross-selling opportunities afforded by digital channels. Digital interactions produce huge amounts of data, which can be analyzed to generate highly accurate insights into customer needs.

Adopt advanced analytics to extract value from customer data

Leveraging some of the same data analytical tools that banks are using to upgrade their risk-scoring models, leading banks are developing sophisticated predictive engines that can anticipate customer actions and generate automated product offers, such as special financing on an anticipated purchase. If trained on an adequately large volume of data, machine-learning algorithms can deliver highly reliable leads addressing the needs of individual customers. By consolidating customer data across its retail businesses, CBA has been able to build a customer engagement engine that analyzes more than 30 billion data points to generate upwards of 40 million offers each month. In addition, we have seen banks increase new sales by nearly 30 percent and increase SME and mid-corporate banking revenues by between two and

three percent through the implementation of “next-product-to-buy” engines.³¹

Risk management

In risk management, leading banks and digital attackers are developing machine-learning analytical engines to evaluate customer creditworthiness with significantly higher accuracy than possible with traditional logical regression techniques. Churning through large volumes of customer data, these high-powered models allow banks to increase lending volumes while also reducing risk costs.

As an example, BCA, which has emphasized both digital delivery and strategic partnerships with Indonesia's leading e-commerce sites, has expanded its lending business while maintaining remarkably low risk costs (with an NPL ratio of 1.4 percent for 2018, compared to 2.5 percent for Indonesia's broader banking sector).

By enriching traditional underwriting data (including demographics, transaction history, and public records) with the addition of unstructured data from internal and external sources (e.g., voice recordings from customer service, wholesaler customer history), some banks have been able to increase the accuracy of their risk models remarkably, in some cases achieving GINI scores of 70 percent, compared to 40 percent for conventional credit-scoring models (Exhibit 8, next page).

By tracking changes in a customer's risk profile in real time, it is possible to deliver automated messaging via preferred channels (e.g., email, text message) to help a borrower stay on schedule with payments, or trigger person-to-person communication if stronger intervention is appropriate to prevent default.

Improve the management of stressed assets

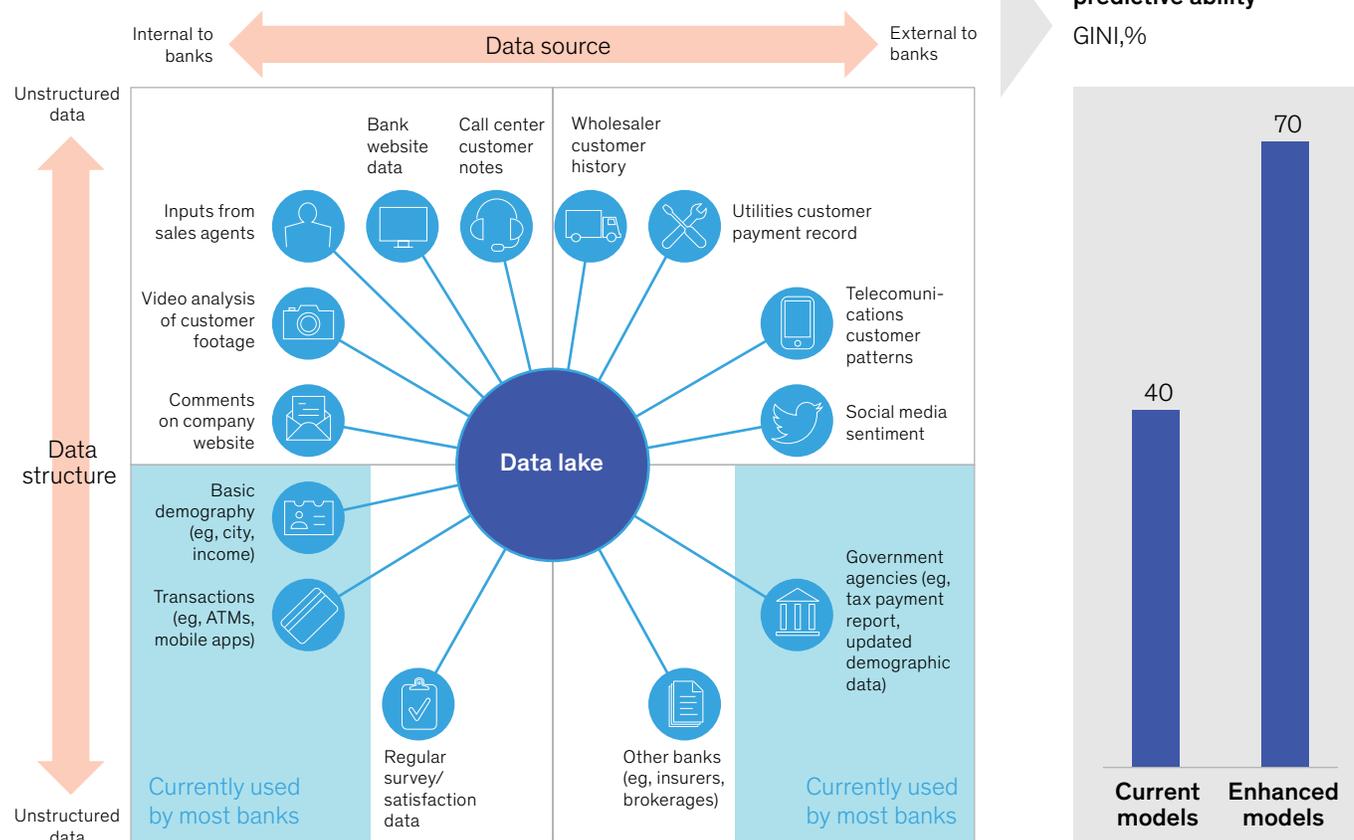
Advanced analytics also make it possible to reduce the cost of managing stressed assets, either by streamlining the process for restoring a payment schedule or determining the best option for liquidating unrecoverable assets. Depending on the size of the NPL portfolio, a bank may form a specialized team, a separate business unit, or (for an accelerated wind-down) an off-balance-sheet special purpose entity (possibly with the participation of external investors).

³⁰ “China Merchants Bank 2017 Annual Report,” China Merchants Bank Co., Ltd., 2017, <http://file.cmbimg.com/cmbir/20180424/d0fe62f9-3db1-4835-90cf-8ed64d7c0ab7.pdf>

³¹ “Using data to unlock the potential of an SME and mid-corporate franchise,” McKinsey on Payments 28 (August 2018):

Risk models leveraging multiple internal and external data sources have been proven to improve GINI scores significantly.

Advanced risk assessment models leverage multiple sources of data



Source: McKinsey analysis

Banks are also using advanced analytics to reduce the cost of collections by up to 30 percent and decrease past-due volumes by ten percent.³² For unrecoverable assets, banks should identify prompt channels for reducing the drag on bank profitability; for example, selling NPLs at market value (with little impact to profitability) or offering the senior tranche of the portfolio at a discount (improving liquidity but weakening profitability).

Asia-Pacific banks could potentially add on average 70 basis points to ROE by 2023 by upgrading their risk-scoring engines and processes for managing stressed assets (see Exhibit C in Appendix B).

Optimize capital

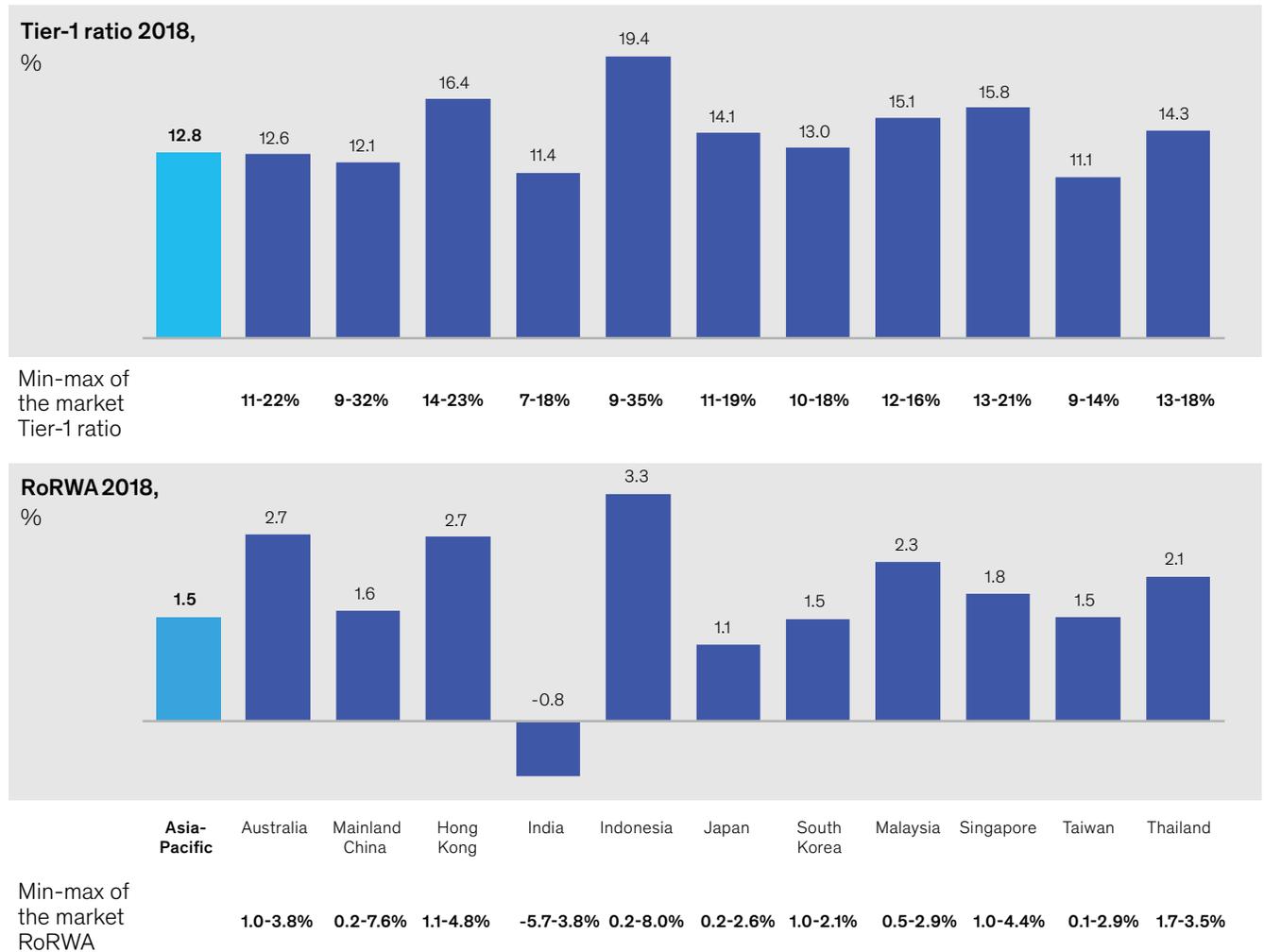
Capital levels are generally adequate across Asia-Pacific markets, as banks have accumulated capital in anticipation of higher requirements under Basel III. However, the broad variation in capital levels across Asia-Pacific suggests a significant level of inefficiency in capital management. For example, Tier-1 ratios in Australia, China, and India are in the range of 11.4 to 12.6 percent (slightly lower than the average of 12.8 percent for the region) but 19.4 percent in Indonesia. Even within markets where banks are subject to the same regulations, capital consumption measured in terms of risk-weighted

³² "The analytics-enabled collections model," *McKinsey on Payments 28* (August 2018): 6. <https://www.mckinsey.com/industries/financial-services/our-insights/mckinsey-on-payments-special-edition-on-advanced-analytics-in-banking>

Exhibit 9

Asia-Pacific banks are well capitalized under current standards, but capital productivity varies significantly across and within markets.

Tier-1 ratio and return on risk-weighted assets (RoRWA)



Source: SNL

asset density varies considerably among banks,³³ suggesting that some banks are wasting capital by holding more than necessary (Exhibit 9). Inefficient capital allocation weighs heavily on banks' ROEs.

Drawing on the experience of banks of varying sizes in diverse markets, we estimate that banks could free up between 10 and 20 percent of capital, enabling them to maximize returns while fostering growth and ensuring capital adequacy. Using advanced diagnostic models to guide capital

allocation, banks can potentially boost ROE by an average of 100 to 200 bps. To reap these gains, banks should ensure that the interpretation of regulatory requirements and guidelines is up-to-date and accurate. They should also ensure that risk models determining capital requirements are granular and accurate enough to reflect fairly the different risk profiles of the underlying portfolios, in order to avoid contamination effects or over-conservatism. Capital budget allocations should extend not just to business units, but all the way

³³ S&P Global Market Intelligence (SNL) database

down to products and client accounts as well (taking into account the expected risk-adjusted returns). Finally, it is important to adjust these allocations periodically to reflect actual capital absorption.

We estimate that the above improvements in productivity, risk management, and capital allocation could push average ROE for Asia-Pacific banks from 10.1 percent in 2018 to 12.1 percent by 2023. It should be noted, however, that these improvements are what banks need to do just to survive. If they are to thrive, they will need to strengthen their business and build scale through a combination of organic and inorganic growth.

Growth opportunities across four business lines

With new competitors entering the field even as growth is slowing, banks must act promptly to capture the \$100 billion annual opportunity for new revenue.³⁴ This opportunity is spread across four business lines—wealth management, retail lending, SME lending, and transaction banking—each buoyed by pent-up demand in under-served markets. To pursue these opportunities, banks must beat the attackers at their own game—establishing robust digital-first delivery and servicing platforms and developing advanced analytical decision engines to track real-time changes in the needs of individual customers.

Growth in wealth management

To win in wealth management, banks need to strike the right balance between self-guided digital tools and high-touch consultation, according to the distinct needs of each segment. Delivering highly personalized portfolio offerings within an omnichannel experience is particularly important in serving high- and ultra-high-net-worth segments. Use of voice recognition and AI can support a high degree of personalization at scale for the mass affluent segment.

Personal financial assets (PFA) in Asia-Pacific are expected to total \$69 trillion by 2025. Growth in the region's PFA is driven primarily by the increase in retirement assets in developed markets (as the population ages) and the expansion of the entrepreneurial class (especially mass affluent and high-net-worth segments) in emerging markets. At the current annual growth rate of nine percent, Asia-Pacific will account for three quarters of global PFA within six years.³⁵ At present, however, this is a largely untapped market—an estimated 80 percent of Asia-Pacific's personal financial assets is not actively managed by third-party professional managers.³⁴

The opportunity is growing in both off-shore and on-shore markets, with investors accustomed to high returns favoring actively managed products. On-shore assets are growing faster due to increasing needs among middle-class investors, stronger regulatory disclosure requirements, and measures encouraging the repatriation of off-shore assets.³⁷ Investors in China will likely seek new onshore products as regulators tighten limitations on shadow banking, and the recent introduction of majority ownership in joint-ventures and wholly owned foreign entity (WFOE) licenses broadens opportunities for foreign investment managers in China.³⁸

Partnerships and acquisitions provide an effective means to deliver sophisticated investment options to local markets. For example, Siam Commercial Bank (SCB) and Julius Baer announced in 2018 an agreement³⁹ to combine SCB's expertise and customer base in Thailand with Julius Baer's global wealth management capabilities and product suite.

Retail lending in underpenetrated segments

Partnerships are an increasingly important means for extending market reach not only in wealth management but in practically all banking businesses. In retail lending, which is expected to

³⁴ 2019 estimate based on Q4 2018, McKinsey Panorama Global Banking Pools

³⁵ McKinsey Panorama Global Wealth Pools

³⁶ McKinsey Panorama Global Wealth Pools 2018 update

³⁷ For example, several markets—including China, Indonesia, Japan, and Singapore—have joined the Common Reporting Standard to facilitate multilateral sharing of financial account and tax-related information, while others including Indonesia have launched tax amnesty programs. See "CRS by jurisdiction 2018," OECD Automatic Exchange Portal, <http://www.oecd.org/tax/automatic-exchange/crs-implementation-and-assistance/crs-by-jurisdiction/crs-by-jurisdiction-2018.htm>; "Late rush to join Indonesia tax amnesty after \$360 billion declared," Reuters, March 31, 2017, <https://www.reuters.com/article/us-indonesia-economy-tax-idUSKBN1720VJ>

³⁸ "Will the good times keep rolling for Asia's asset managers," McKinsey Global Banking, October 2018, <https://www.mckinsey.com/industries/financial-services/our-insights/will-the-good-times-keep-rolling-for-asias-asset-managers>

³⁹ "Julius Baer and Siam Commercial Bank to enter into strategic wealth management joint venture," Julius Baer, March 8, 2018, <https://www.juliusbaer.com/group/en/news-detail-page/item/julius-baer-and-siam-commercial-bank-to-enter-into-strategic-wealth-management-joint-venture/>

grow from a total of \$12.8 trillion in 2018 to \$21.2 trillion in 2025, many banks are discovering that by partnering with a strong digital company—e.g., an e-commerce site, a telecommunications company—they can reach new customers and collect richer data. This enables banks to generate highly reliable risk scores for the region's fast-growing middle class,⁴⁰ which is expected to expand from 40 percent of all Asia-Pacific households in 2018 to more than 60 percent in 2025.⁴¹

Kotak Bank, for example, has partnered with telecommunications company Bharti Airtel, not only reducing the costs of new customer acquisition and service delivery but also gaining access to Airtel's network of 250,000 retail stores across India. In 2016 it extended its reach further into the mass market of lower-income consumers through its acquisition of BSS Microfinance (217,000 customers and 78 branches).

Various types of secured and unsecured consumer lending represent a big opportunity for Asia-Pacific banks. However, in order to keep risk costs low while extending loans to consumers with limited or no credit history, banks will need to develop powerful diagnostic models not only to assess risk accurately but also to identify precisely the type of credit product best suited to individual users. It is particularly important to restrict customized credit offers to segments where product penetration is low relative to GDP, as regulators are keen to reduce debt levels in overpenetrated segments. Banks should also prioritize "asset light" credit products in order to optimize the amount of capital they must set aside to meet Basel III capital requirements.

Lending to SMEs

Bank lending to small and medium-size businesses accounts for more than a third of all bank loans in Asia-Pacific, and the SME portfolio is expected to grow 9.1 percent annually to \$23 trillion in 2025 (Exhibit 10, next page).

While the SME segment accounts for the biggest share of Asia-Pacific lending, banks are still missing the better part of the opportunity. SMEs contribute 54 percent of GDP in Asia but generate only 25 percent of total banking revenues before risk

costs.⁴² The vast majority of SMEs in Asia-Pacific turn to non-bank sources to finance working capital (Exhibit 11, page 21).

The challenge for most banks is that they lack the information they need to assess the creditworthiness of SMEs accurately and often make bad lending decisions. As a result, banks' risk costs for the SME segment in Asia-Pacific are double those for the large corporate segment.

Lending to SMEs is potentially a highly profitable business for banks that can leverage digital channels to reach the mass market of SMEs and use advanced analytics to identify qualified borrowers for both secured and unsecured lending. CMB, for example, has built a fully digitized SME services platform, through which they offer a streamlined loan application process. The automated review is completed within minutes, and customers can access funds immediately upon approval. Third parties provide additional services by linking to the platform through APIs, helping to increase activity on the platform. In 2018, CMB's NPL ratio was 1.36 percent, compared to an average of 1.8 percent for China.

Banks can tailor platform solutions for SMEs and use them both to acquire new customers and deepen existing relationships. CBA's Wiise, for example, is a cloud-based business management platform designed especially for SMEs. Services on the platform, which integrates seamlessly with CBA's invoicing platform, include accounting, payroll and banking, human resources, and inventory management.

In addition to helping banks reduce loan losses among SMEs, the vast and diverse types of customer data generated on an SME platform can enable banks to craft timely offers for investing excess cash, payroll management, accounting and reconciliation processes, and more.

Growth opportunity in transaction banking

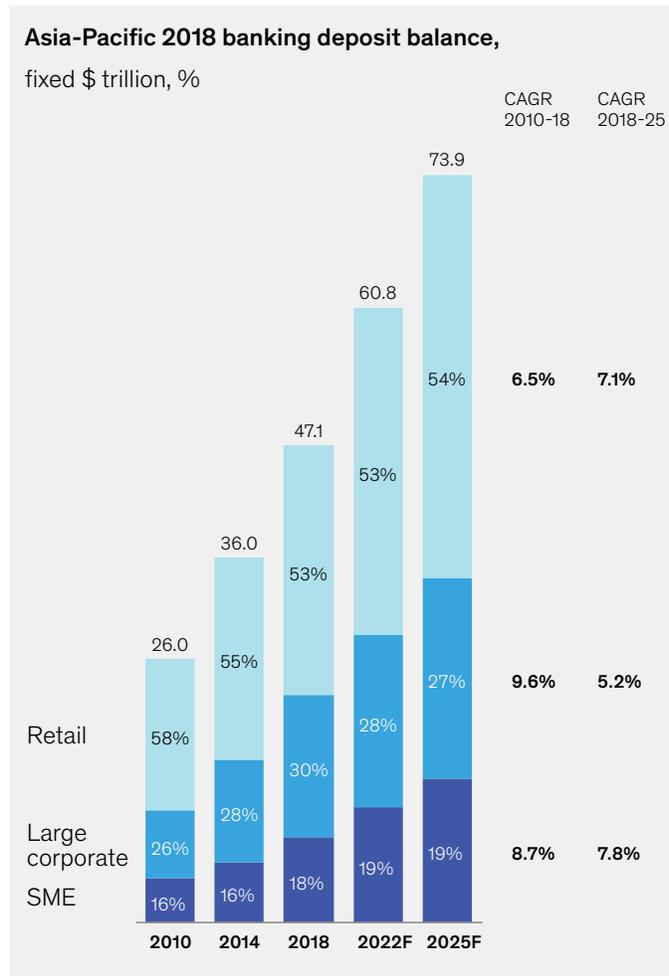
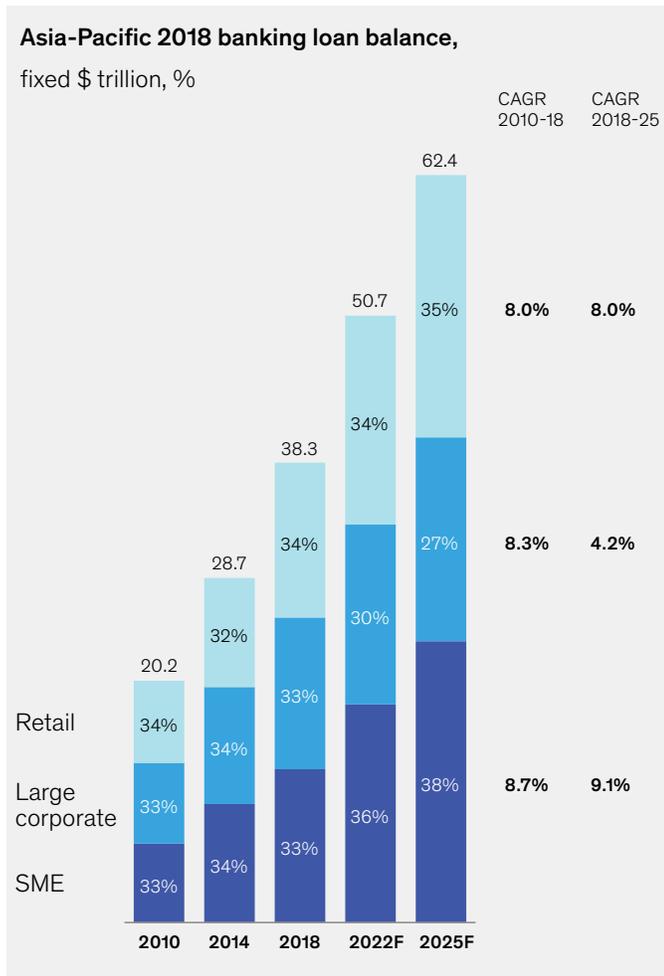
Not only does transaction banking account for approximately a third of all banking revenues in Asia-Pacific, but the region also captures more than half of transaction banking revenues globally. During a decade of lackluster growth in other regions (five

⁴⁰ Defined as households with annual income between \$10,000 and \$50,000.

⁴¹ The Economist Intelligence Unit

⁴² McKinsey Panorama Global Banking Pools.

Retail and small and medium enterprise lending is expected to exhibit strong growth in Asia-Pacific.



Source: McKinsey Global Banking Pools

percent in the Americas and two percent in EMEA), transaction banking in Asia-Pacific has grown 17 percent annually.⁴³

Analytics, digitization, and partnerships are just as crucial to revenue growth in transaction banking as in the other banking businesses, and there are significant opportunities to increase profitability and open up new revenue streams across a range of products and services, from procurement and supplier financing, to cash management and customer relationship management.

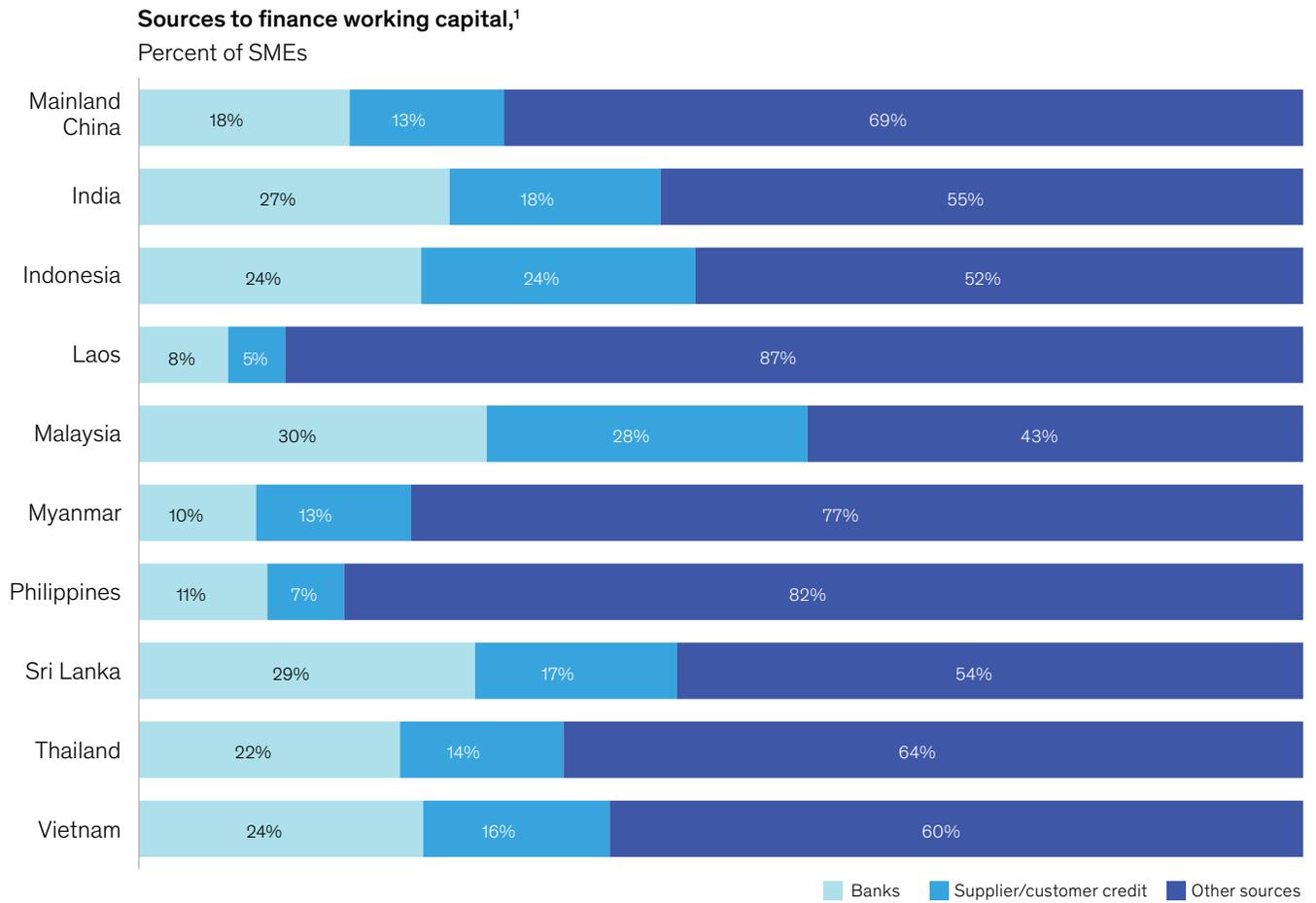
For example, banks can leverage internal data stores and capabilities in advanced diagnostics to deliver enhanced liquidity management

services, optimize netting arrangements for on-us transactions, and implement dynamic pricing. Using APIs to link client and bank systems, banks could potentially expand merchant services to include loyalty programs (e.g., managing points, special offers, financing).

Securities services is another fast-growing business, as institutional investors show increased interest in Asia-Pacific markets, particularly China. Banks should improve the efficiency of securities processing and post-trade servicing with the help of powerful diagnostic models and digital client interfaces. Cross-border flows (for both capital and trade purposes) are another fast-growing, high-

⁴³ McKinsey Panorama Global Banking Pools, Global Transaction Banking service line.

Small and medium size enterprises are largely underserved across emerging Asia, particularly for working-capital financing.



¹ Based on latest-year data available.
Source: World Bank Group Enterprise Surveys

volume business, but the margins are very thin and banks that pursue this opportunity must develop innovative, low-cost platforms in order to attract sufficient volume.

Finally, supply chain finance (SCF), which is expected to grow 14 percent annually, not only enables a bank to embed use cases (e.g., sourcing, financing, invoicing, reconciliation) within corporate treasury and trade operations, but also

to strengthen relationships with corporate clients' suppliers, many of which are SMEs. There are various initiatives to establish SCF platforms using distributed ledger technology. These include IBM's partnerships with logistics and shipping companies,^{44,45} as well as government-led industry consortia, such as the Global Trade Connectivity Network (GTCN), led jointly by the Monetary Authorities in Hong Kong and Singapore.⁴⁶

⁴⁴ "IBM-Maersk in blockchain tie-up for shipping industry," Reuters, March 6, 2017, <https://www.reuters.com/article/us-usa-blockchain-ibm-idUSKBN16D26Q>

⁴⁵ "PSA, PIL and IBM collaborate on blockchain-based innovations," PSA, August 17, 2017, <https://www.globalpsa.com/psa-pil-and-ibm-collaborate-on-blockchain-based-innovations/>

⁴⁶ "Singapore and Hong Kong launch a joint project on cross-border trade and trade finance platform," Monetary Authority of Singapore, November 15, 2017, <http://www.mas.gov.sg/News-and-Publications/Media-Releases/2017/Singapore-and-Hong-Kong-launch-a-joint-project-on-cross-border-trade-and-trade-finance-platform.aspx>

Partnerships, mergers, and acquisitions can be an effective way to extend market reach, achieve scale, and consolidate technology and talent.



Source: McKinsey Fintech database

Partnerships and mergers and acquisitions

Given the competitive advantages that come with scale and being fast to market, some banks are finding that mergers and acquisitions—along with strategic partnerships—are an efficient way to enhance their customer propositions. Both partnerships and M&A can also enable a bank to extend market reach and increase access to diverse types of data. Building capabilities in partnerships, joint ventures, and M&A is also a smart way to brace for possible consolidation.

Bank-fintech partnerships

Our research shows that 79 percent of leading banks⁴⁷ have partnered with a fintech to foster innovation in payments, lending, investment, or other areas (Exhibit 12). Thailand’s Kasikornbank and Grab have teamed up to launch GrabPay by KBank, a mobile wallet. BRI has partnered with Alipay to expand point-of-sale acceptance of mobile payments for Chinese tourists visiting Indonesia. OCBC Bank has joined forces with personal finance portal MoneySmart to offer low-rate mortgages. UOB has partnered with OurCrowd, which enables consumers to invest small amounts in startups.

⁴⁷ Based on a research covering publicly announced partnerships of the top 100 banks and other digitally advanced banks, from McKinsey Panorama Fintech

Acting as an orchestrator or as one of several lead partners, a bank may establish a platform or digital ecosystem, developing APIs that enable third parties to link to the platform and introduce relevant services. The platform could be a consumer-oriented digital platform focused on a particular type of service (e.g., healthcare, housing, or travel and tourism), an SME platform (e.g., merchant services along with cash management as well as payroll, accounting, human resources management, and customer relationship management), or a large-corporate supply-chain finance platform.

Other types of platforms (e.g., cloud-based data services like Data Republic or blockchain-based payments networks like Visa B2B Connect) support the operation of marketing platforms. The Hong Kong Monetary Authority (HKMA) engaged Ping An Group's technology subsidiary OneConnect to develop eTrade Connect, a blockchain-based trade finance platform launched in 2018,^{48,49} with participants including several large Chinese banks as well as regional and global banks.^{50,51}

Successful partnerships depend on identifying the right partner and establishing clear terms for combining resources and sharing returns equitably. There are, of course, different ways to form a partnership, including joint marketing ventures, investing in the company, and all-out acquisition.

Developing M&A capabilities as a competitive advantage

In addition to partnerships, we expect that some Asia-Pacific banks will likely pursue M&A to gain scale advantages in distribution, productivity, technology, and talent. This trend is continuing in diverse global markets, with several large deals announced in the US this year, including BB&T's acquisition of SunTrust Bank,⁵² Fiserv's acquisition of First Data,⁵³ and the acquisition of Worldpay by Fidelity National Information Systems (FIS).⁵⁴ As part

of their strategic planning, banks should consider the potential of a merger or acquisition to advance the organization toward its strategic goals and develop its capabilities in M&A.

Some banks in the region have already made M&A an integral part of their strategy. As more banks follow suit, they should establish a rigorous process for screening potential acquisition targets and prioritizing them according to their relevance to clearly articulated strategic objectives (e.g., expansion into new markets, acquiring innovative technology, building scale). They will also need to decide how big the M&A group should be. What is the right mix and number of companies for the pipeline? Will the M&A group be part of corporate strategy, or will it report to a particular business unit executive, or directly to the CEO? A mid-size Asia-Pacific bank may need between six to 12 people, depending on the number of deals it aims to close in a year. Will the bank target five or ten banks to acquire in a year? And how much larger must the group be if the bank will also screen thousands of potential fintech acquisitions in search of 20 to 50 start-ups to meet new technology and talent needs?

Developing M&A capabilities is a way to secure a competitive advantage by targeting the most promising assets. It is critical to adopt a portfolio approach, giving a single team responsibility for joint ventures, investments, and full buy-outs. Transactions should undergo close scrutiny for both financial and strategic due diligence, with leaders testing the rationale for any particular deal against the information that becomes available after signing the letter of intent.⁵⁵ Ultimately, executive leadership should be convinced that the bank is the best buyer for a particular asset and communicate from the beginning ambitious yet achievable synergy goals to internal and external stakeholders.⁵⁶

⁴⁸ eTrade Connect, Hong Kong Interbank Clearing Limited, https://www.hkicl.com.hk/eng/our_services/etradeconnect.php

⁴⁹ "Leading banks in Hong Kong are working to bring blockchain trade finance platform from proof-of-concept to production," eTrade Connect, July 17, 2018 <https://www.etradeconnect.net/Portal/NewsDetail?id=0>

⁵⁰ "Hong Kong and Singapore launch a joint project on cross-border trade and trade finance platform," Hong Kong Monetary Authority, November 15, 2017 <https://www.hkma.gov.hk/eng/key-information/press-releases/2017/20171115-6.shtml>

⁵¹ "Hong Kong launches blockchain-based trade finance," *Financial Times*, July 15, 2018 <https://www.ft.com/content/f2cacb86-85a3-11e8-96dd-fa565ec55929>

⁵² "BB&T and SunTrust to combine in \$66bn US bank deal," *Financial Times*, February 7, 2019, <https://www.ft.com/content/0330a7e0-2aca-11e9-88a4-c32129756dd8>

⁵³ "Payments processor Fiserv to buy rival First Data in \$39bn deal," *Financial Times*, January 16, 2019, <https://www.ft.com/content/c722333a-1990-11e9-9e64-d150b3105d21>

⁵⁴ "Payments group Worldpay to be acquired by US rival in \$43bn deal," *Financial Times*, March 18, 2019, <https://www.ft.com/content/5bdec340-494c-11e9-bbc9-6917dce3dc62>

⁵⁵ "M&A as competitive advantage," McKinsey.com, August 2013, <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/m-and-a-as-competitive-advantage>

⁵⁶ "Lessons from an integration: A conversation with Worldpay's Mark Heimboach," McKinsey.com, February 2019 <https://www.mckinsey.com/industries/financial-services/our-insights/lessons-from-an-integration-a-conversation-with-worldpays-mark-heimboach>

Post-merger integration requires significant research and planning, as differences in technology, customer relationships, and organizational culture are often significant factors in failed mergers. Banks should begin planning post-merger integration well before a deal is finalized. Once the deal is completed, executives need to devote adequate resources to understand in depth how the two organizations operate, identify potential sources of tension as they come together, and complete the integration within 12 months of deal closure. Our research shows that a merger is 2.6 times more likely to succeed (and deliver 40 percent more total returns to shareholders) if the company meets its synergy targets within the first two years of closing the deal, compared with taking more than four years to achieve those targets.⁵⁷

The scope and depth with which a bank can the pursue the growth opportunities outlined in this

chapter will depend on its existing capabilities, the segments it serves, and the capital available for investment. Given the continued stormy outlook for Asia-Pacific—weakening macroeconomic expansion, the continued compression of banking margins, the possibility of even higher risk costs, and the need for scale—we expect that most banks will face an existential choice: Either reinvent themselves as digital-first, data-driven organizations, or prepare to sell. There is ample opportunity for less efficient organizations to exercise the efficiency and growth levers discussed above as a means to increase value. Organizations that fail to act will likely unload assets gradually and ultimately disappear. The storm in Asia-Pacific, thus, offers highly efficient, digitally savvy banks the opportunity to pursue synergies of scale, market share, technology, and talent through mergers and acquisitions.

⁵⁷ “Eight basic beliefs about capturing value in a merger,” McKinsey.com, April 2019, <https://www.mckinsey.com/business-functions/organization/our-insights/eight-basic-beliefs-about-capturing-value-in-a-merger>

A model for rising above the storm

Even as the storm rages across Asia-Pacific, several innovative institutions have increased revenue and extended market share with low-cost digital-first business models, often supported by strategic partnerships and acquisitions. Not only have these banks captured market share at the expense of their competitors, but they have also achieved higher ROEs. Investors, in turn, have rewarded them with disproportionately high valuations, pushing P/B multiples well above market averages. In this sidebar, we take a closer look at how two of these banks—HDFC and DBS—have leveraged digital capabilities to build scale efficiently.

HDFC Bank, India

Having carried out a comprehensive plan to digitize operations and distribution, HDFC now processes 85 percent of transactions for its 43.6 million customers through digital channels. By adopting AI and chatbots to automate customer service interactions across multiple channels, including social media, the bank has significantly reduced its costs for sales and service.

HDFC has increased deposit and lending volumes by extending banking services to previously unbanked/underbanked consumers in rural areas, with a focus on digital payments and cards, which reduces the burden of cash and generates data that can be used to underwrite credit products. For example, HDFC's "Milk-to-Money" program tracks regular ATM deposits to establish a credit profile for members of dairy cooperatives.

To expand its payments business, HDFC has issued 10.7 million credit cards and 24.3 million debit cards, and installed 404,000 POS terminals and m-PoS installations. Digital payments alternatives for consumers include Bharat QR, UPI, Aadhaar, and SMS payments. "SmartHub" is HDFC's mobile app for merchant services, and DigiPoS enables merchants to accept digital payments at the POS.

Reaching beyond traditional banking services, the SmartBuy platform provides special offers to 1.5 million monthly users at HDFC-preferred merchants. SMS alerts in local languages provide information about weather, planting, and harvesting.

HDFC's efforts to extend digital banking to rural areas has significantly reduced costs, holding the NPL ratio down to 1.30 percent—well below the average NPL ratio of 11.7 percent for India. Investors have responded favorably, and HDFC's P/B ratio has climbed to 4.5 (Exhibit 13).

DBS Bank, Singapore

Through extensive digitization of operations and delivery channels, DBS has made digital banking the main channel for acquiring new customers and serving existing customers. This has enabled the bank to improve its cost-to-income (C/I) ratio by six percentage points in consumer and SME banking (from 49 percent to 43 percent from 2015 to 2017) and to reduce costs by approximately \$100 million in corporate banking, private banking, markets, and other businesses. Fortified with the lowest C/I ratio among its peers and a superior digital experience, DBS has been able to pre-empt digital disruptors.

In a flurry of activity in 2016 and 2017, DBS extended its digital banking offering to under-served markets, launching Digibank in India⁵⁸ and Indonesia⁵⁹ and acquiring ANZ wealth management and retail operations in five markets.

These efforts have helped to strengthen the bank's returns, with ROAE of 12.1 percent in 2018 matching the average for Singapore. At the beginning of 2019, the total return to DBS shareholders bested the average TRS of peer banks in the Strait Times Index by 26 percentage points (Exhibit 14).

Innovative banks in diverse Asia-Pacific markets are building scale and increasing their share of customers' wallets by offering a distinctive digital value proposition and extending their footprint through strategic partnerships and acquisitions. They have become, in essence, attacker banks. While the threat posed by digital giants should not be underestimated, many banks will likely find that the most vital threats they face will come from incumbent banks recast as digital attackers. An attacker bank can pursue one of two models: capture market share either as a large-scale/low-cost provider of end-to-end financial services or as a technology innovator assuming the role of disruptor. The success of either model will depend on achieving superior returns and, consequently, higher market capitalization.

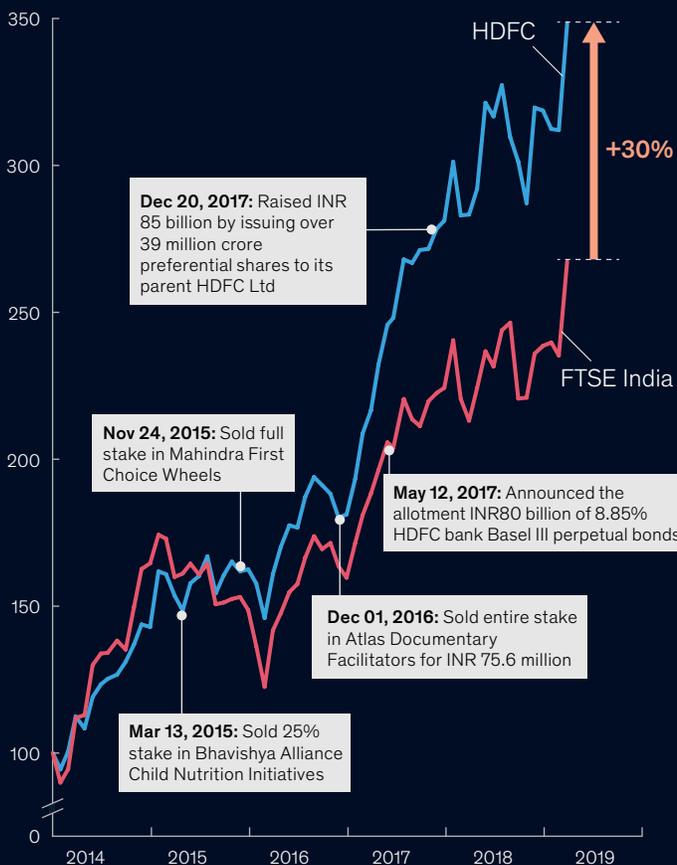
⁵⁸ DBS launches India's first mobile-only bank, heralds 'WhatsApp moment in banking,' DBS Bank Ltd., April 26, 2016, https://www.dbs.com/newsroom/DBS_launches_Indias_first_mobile_only_bank_heralds_WhatsApp_moment_in_banking

⁵⁹ "DBS launches digibank in Indonesia," DBS Bank Ltd., August 29, 2017, https://www.dbs.com/indonesia/newsroom/DBS_launches_digibank_in_Indonesia.

HDFC Bank has outperformed its competitors through a relentless focus on effortless banking delivered through digital channels.

HDFC Bank total return to shareholders

1 Jan 2014 – 31 Mar 2019 (1 Jan 2014 Rebased to 100), %



| Market capitalization | | | | | |
|------------------------------------|-------|-------|-------|-------|-------|
| INR billion, Period ending 31 Dec. | 2014 | 2015 | 2016 | 2017 | 2018 |
| | 1,796 | 2,563 | 2,708 | 3,697 | 4,895 |

Key performance indicators and strategic initiatives

Performance

Key financial metrics, %

| P/B Ratio | C/I Ratio | NPL Ratio | ROAE |
|--------------------------------------|-----------|-----------|------|
| 4.5 | 42.0 | 1.3 | 18.4 |
| Operating revenue CAGR 2014-18: 21.2 | | | |

Strengthening the core

Achieve cost efficiencies

85 percent of transactions for 43.6 million customers are digital

Expand physical footprint and network

Financial inclusion in rural areas with comprehensive suite of innovative products (e.g., milk-to-money ATM, which also enables credit scoring)

Promote non-cash payments by issuing 10.7 million credit cards and 24.3 million debit cards and enabling 404,000 POS terminals and mPOS installations

Provides advisory on weather, planting, harvesting, etc., in local languages through SMS and 12 farmer centers

Capturing new growth

Digital innovation

Comprehensive suite of digital payments for consumers, including Bharat QR Code, UPI, Aadhaar and SMS pay solutions, as well as SmartHub app and digital payment acceptance for merchants

AI-enabled chat bot "EVA" (Electronic Virtual Assistant) available on all digital platforms including Alexa and Google Assistant; social media banking bot, OnChat, enables transactions on Facebook Messenger

SmartBuy platform provides 1.5 million monthly users special offers at HDFC-preferred merchants

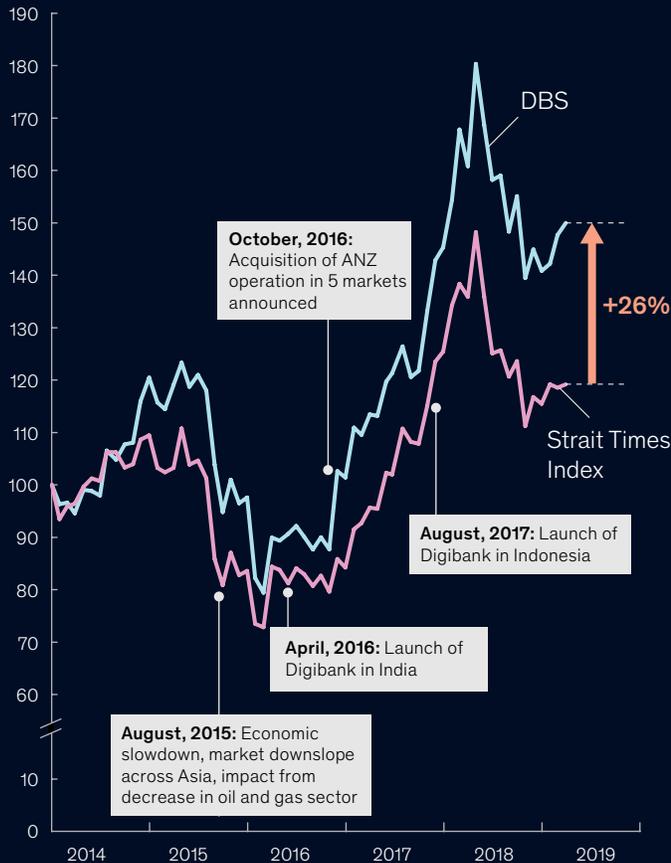
Digital loans against securities and mutual funds and the ability to get a loan approved online in under three minutes

Exhibit 14

DBS outperformed the market by developing digital capabilities to pre-empt disruptors in core market and disrupt incumbents in growing markets.

DBS total return to shareholders

1 Jan 2014 – 31 Mar 2019 (1 Jan 2014 Rebased to 100), %



Market capitalization

| SGD billion, Period Ending 31 Dec. | 2014 | 2015 | 2016 | 2017 | 2018 |
|------------------------------------|------|------|------|------|------|
| | 51 | 42 | 44 | 64 | 60 |

Key performance indicators and strategic initiatives

Performance

Key financial metrics, %

| P/B Ratio | C/I Ratio | NPL Ratio | ROAE |
|-------------------------------------|-----------|-----------|------|
| 1.3 | 44.0 | 1.5 | 12.1 |
| Operating revenue CAGR 2014-18: 8.0 | | | |

Strengthening the core

Acquire new capabilities

Rapidly transforming to a digital bank to pre-empt disruptors

Releasing digital banking application and prioritizing digital acquisition over traditional channels

Achieve cost efficiencies

Initiated transformation to digital to lower cost-income ratio and change operating model and way of working

Improved C/I ratio by 6% in consumer and SME (from 49% to 43% between 2015-17) and reduced costs by \$100 million in corporate banking, private banking, markets, and other businesses

Capturing new growth

Expand physical footprint and network

Disrupting incumbents in growing market in new geographical area (India and Indonesia) by investing \$150 million to develop digital banks, i.e. Digibank

Tap into new customer segments

Targeting young, digitally savvy consumer segment across geographical areas with Digibank, which offers unique value propositions

Increasing focus on SME growth market and opportunistic penetration into consumer finance

Source: DBS annual report, investor presentation; SNL

Reinventing the bank for productivity and growth

Asia-Pacific banks are under attack. Leveraging low-cost, all-digital business models, new entrants are adding to the downward pressure on bank margins. At the same time, the adoption of advanced analytical tools, including machine learning and artificial intelligence, is opening up new ways to generate revenue, even as macroeconomic growth slows and demand for traditional banking products weakens. To compete in these challenging circumstances, banks need to future-proof themselves by becoming faster, nimbler, more customer-centric, and more innovative. These are far-reaching changes, pushing bank leadership to reimagine how banking is done. In order to successfully exercise the efficiency and growth levers discussed in the previous chapter, banks must reinvent themselves, focusing on three enablers: technology, data analytics, and talent.

As they envision the bank of the future and plan the journey forward, CEOs should consider how the bank will deploy existing assets and build new capabilities for market-leading performance. Will the bank attack to extend market share, or is a defensive strategy in order? If the bank already enjoys scale advantages, can it push productivity still higher by increasing scale? CEOs of small and mid-scale organizations must develop a market-leading value proposition and stay focused on executing the strategy. Executive leadership should also determine where the bank can grow and, if a particular market or product area does not fit in the strategic vision, where to reduce investment. Of course, improving productivity is as important as top-line growth, if not more so, and banks should be careful to find the right balance between the two, and decide which steps should be executed sequentially and which can run in parallel. As they

draw the roadmap, leaders should also consider how partnerships and M&A can help the bank achieve its goals.

Technology

Technology is at the center of everything the bank does, and the shift to a more flexible technology architecture is only the beginning of a holistic transformation affecting every aspect of the bank—its organization, operating model, people, and culture.

Banks across Asia-Pacific need urgently to streamline their technology architecture and modernize systems and applications in order to compete with digital companies on speed, productivity, and customer experience. Market expectations are rising as customers become accustomed to the sleek, fast, and intuitive design

of digital platforms like Facebook, Amazon, and WeChat. To remain competitive, banks need to future-proof their technology by shifting to modular platforms that can be updated frequently as the market changes and new innovations become available.

Digital companies have demonstrated the advantages of the cloud, and banks are gradually shifting to cloud-based infrastructure, storage, and computing. Some are turning to third-party providers (e.g., Mambu, solarisBank) for core technology infrastructure. Banks are also building microservices and APIs through a middle layer (e.g., enterprise service business or service-oriented infrastructure); however, practically all banks need to do a better job of adopting new languages and tools to increase automation and speed up response times.

Banks should also improve the way they develop and deliver solutions by implementing the latest DevOps tools and methods across the development pipeline, which can speed up time-to-market by 80 percent, reduce time spent on diagnostics by 75 percent, and cut FTE by 75 percent. At Macquarie, for example, application development teams interface with a self-service development platform, moving rapidly through live-testing and application enhancements to full launch.

Ultimately, each bank must build a new culture, empowering tens of thousands of employees with new roles and skillsets and rewiring the organization with a new governance structure, new processes, and behaviors. For example, cross-functional collaboration is already blurring the lines between business and technology, but banks can go even farther by extending the agile team structure across the entire enterprise. The emphasis on collaborative experimentation, transparency, and performance tracking supports a rigorous dual focus on customer experience and value.

In this regard, there are several ways to reinvent the bank as a digital company, living and breathing agility across the enterprise. Some banks are in a good position to transform from within, rebuilding core elements of the technology infrastructure and redesigning the associated operating model. In this approach, the bank gradually reinvents the entire

organization.

Larger organizations with extensive legacy systems may find it more practical to lead the transformation through a separate unit. Several large banks have established a “digital factory” or “incubator” where they begin developing not only technology and tools, but also skills, ways of working, and replicable models of collaboration. As they gradually build the digital operation from the ground up, they begin to embed new technology and new ways of working across the organization, sowing the seeds of change across the entire enterprise.

It is only through this broader, holistic transformation that a bank can truly accelerate innovation and respond quickly to fast-evolving customer needs. Reinventing the bank as a digital company is a sound strategy for beating digital attackers, and to get it right, bank leadership should aim to create a tech-native culture. Banks that drag their feet in this transformation are destined to become irrelevant and disappear.

Data analytics

As customer experience becomes an increasingly critical source of competitive distinction in Asia-Pacific’s slow-growth banking environment, the smart use of data analytics can enable a bank to break away from the pack. Research shows that by leveraging advanced analytics to deepen relationships and attract new customers, banks can potentially boost profit before taxes by between 20 and 40 percent.⁶⁰

Most Asia-Pacific banks, however, have yet to generate an adequate return from their analytics investments. The problem is often the failure of top leadership to focus on data as a core enterprise asset. We summarize below what banks must do to extract value from their data and analytics capabilities.

A value-oriented analytics program starts with development of an enterprise-wide data strategy and investment roadmap. The executive team and business unit leads should focus on 20 to 30 analytics use cases that have a clearly defined and measurable benefit and can be delivered and scaled promptly across the organization, thus avoiding the “pilot trap.” The roadmap should prioritize early

⁶⁰ McKinsey estimates based on a financial institution with approximately \$6 billion to \$11 billion in revenues and \$4 billion to \$7 billion in operating expenses.

delivery of use cases that can energize frontline stakeholders and secure their support for the analytics program by producing measurable results (e.g., a recommendation engine that significantly improves conversion rates).

As they prepare the roadmap, use-case leads should build the business case for each analytics initiative, weighing the benefits (e.g., revenue, customer experience, efficiency, risk reduction) against the required investment and method of funding. Banks should be careful to collect, process, and store the right amount of data required to build and unlock value-oriented use cases (e.g., from compliance reporting and credit underwriting to next-product-to-buy recommendations).

Banks should also consider how analytics use cases will be developed and deployed. One option is to establish multi-disciplinary data and analytics squads with the appropriate mix of people from IT, analytics, product management, and sales and relationship management. Each squad could focus on executing a use case from design, to ingestion, modeling, piloting, and full implementation.

Once analytics models are launched, value assurance is just as important as the roadmap, as it can reveal where the program has strayed off course. Banks should measure actual gains in product performance and customer value against budgeted returns on investment. Analysis of non-financial data (e.g., customer service interactions, internal operations data) can help employees identify and refine practices that contribute to higher performance. With sufficient analytics and data-driven reporting capabilities in place, banks could enable fact-based decision-making, rather than relying on what worked in the past.

Determining the optimal technology architecture for data ingestion, storage, and manipulation is another critical element. This includes the design of data storage (e.g., warehouses and data lakes where data can be held in raw and granular state and cleaned only if the business case proves positive). Furthermore, the analytics platform must accommodate modeling tools for building analytical engines and have adequate piping to enable business units and support groups to access data. Finally, the platform should support

the development of visualization tools that help employees customize reports and incorporate analytical insights into daily decision-making.

Given the huge impact that data and analytics capabilities can have on various banking business lines, data governance is a big responsibility and deserves the dedicated attention of top leadership. Ideally, the governance structure should provide the right amount of centralized control (e.g., to ensure coordination of strategic investments, management of core use cases and modeling tools, and the proper and ethical use of data), balanced with a degree of decentralization (e.g., to allow business units to develop specialized models for cross-selling, customer relationship management, and internal performance management). Many banks have adopted a “federated” governance framework (controls and responsibility shared among business units, domain owners and stewards, and CDO/data management center) as the most effective approach. In addition, it is crucial to determine who owns the data and how to limit access to protected data. Managing metadata—how data sets are organized and labeled—also falls within the scope of governance.

For certain types of data, partnerships can reduce storage costs and help banks comply with data privacy and security requirements. For example, ANZ, NAB, and Westpac have each invested in Australian start-up Data Republic, a data hub through which organizations can store, exchange, and collaborate on aggregated data projects in a secure environment.⁶¹

Finally, with the emergence of data analytics as a core competency, banks are creating new roles for data scientists, data engineers, business specialists, visualization designers, translators, and other talent. A special push is required to go the last mile and embed analytics in the everyday work of tens of thousands of employees. Breakaway analytics firms generally devote at least 50 percent of analytics investments to developing visualization tools and training frontline staff, product managers, and others on the use of analytics insights in customer interactions.⁶²

Analytics capabilities are already becoming a competitive advantage for leading organizations; slow followers will struggle to remain relevant.

⁶¹ “ANZ joins the data republic,” Innovationaus.com, February 26, 2018, <https://www.innovationaus.com/2018/02/ANZ-bank-joins-the-data-republic>

⁶² McKinsey Analytics Research, “Analytics at scale—Insight to outcome,” March 2018

Talent

As the bank prepares itself for the future, it will need to define new roles and skills profiles in order to reap the full potential of digital and analytics. In addition to the challenge of hiring top digital talent, banks will need to use a combination of upskilling and redeployment in managing the approximately 40 percent of banking activities that can be automated with current technologies. Our research also indicates that 50 percent of banking jobs could see half of their activities automated by 2030.⁶³ Investing in leaders is another critical element in building the workforce for a digital-first, data-driven organization.

How will the bank begin to build the workforce of the future? From the outset, the bank should understand the mix of skills required for the future workforce (e.g., three to five years out) both in relation to the bank's current skillsets and the anticipated future supply of relevant skills in the markets served. It will likely not be possible to hire enough qualified agile coaches, data scientists, engineers, analysts, and designers locally. Top digital talent is scarce, and companies from all industries are competing to fill fast-growing needs. Demand for digital capabilities is estimated to outstrip supply by a factor of four, and demand for big data talent is expected to be between 50 and 60 percent greater than the projected supply over the next three to five years.⁶⁴

Upskill current workforce

For current employees, banks should develop a combination of boot camps, digital and analytics academies, and self-guided learning programs, using a variety of formats to engage employees with diverse learning styles and needs. Some employees will likely acquire new skills that enable them to advance their careers beyond banking. Maybank, for example, has launched a digital upskilling program, with sessions on coding, algorithm programming, artificial intelligence, and machine learning.⁶⁵

Banks should also consider training employees in cross-functional skills. An example is ING's "circles" and "super circles" program, where employees learn end-to-end tasks (e.g., for branch operations) rather

than just one task in the flow (e.g., teller, account officer, customer service rep). This versatility makes for more varied work, leading to higher job satisfaction and productivity. Not only is "upskilling" a cost-efficient way to shift the organization toward a digital-first business model, but it also increases employee support for technology innovations. In Singapore, a Professional Conversion Programme has been developed and launched by Workforce Singapore (WSG) and the Institute of Banking and Finance (IBF) in partnership with banks to upskill thousands of employees in consumer banking roles (e.g., tellers, customer service officers) that are highly impacted by the rise of technology. IBF manages national accreditation and certification for the financial services sector.⁶⁶

Hire and retain top digital talent

Banks should aim to hire the best digital talent in the market in order to build their capabilities in technology, data analytics, agile, and design, along with the traditional skills in relationship management, credit underwriting, and industry expertise, among others.

For most banks this means revamping the recruiting strategy and enabling human resources to know tech culture and work with recruiters who connect easily with tech people. There are various ways to raise the bank's visibility among top digital talent, which helps generate interest in the bank as an important part of a career in technology. DBS, for example, has forged ties with the fintech community and universities, organizing workshops, inviting guest speakers, and planning other activities to strengthen its network of developers. It also organizes hackathons, which have proven popular on college campuses and in the tech community.⁶⁷

Leading in technology and market performance will increase the bank's appeal to top candidates, as will opportunities to be creative and make a difference. However, in order to keep top digital talent on board, it is important to provide a culture and working environment that are significantly different from what banks have traditionally offered. Digital natives often place a premium on experimentation (including freedom to fail), collaboration, and transparency

⁶³ "Skill shift: Automation and the future of the workforce," McKinsey Global Institute, McKinsey.com, May 2018.

⁶⁴ "The new tech talent you need to succeed in digital," McKinsey.com, September 2016.

⁶⁵ "How Maybank is creating a people-centric workplace of the future," *Human Resources*, February 25, 2019 <https://www.humanresourcesonline.net/how-maybank-is-creating-a-people-centric-workplace-of-the-future/>

⁶⁶ See: https://www.citibank.com.sg/global_docs/pdf/CA/2018/Citi-launches-Professional-Conversion-Programme-Immediate.pdf / <https://www.straitstimes.com/business/banking/dbs-to-re-skill-1500-bank-staff-in-its-own-professional-conversion-programme/> / <https://www.ocbc.com/group/media/release/2018/ocbc-bank-to-reduce-teller-jobs-by-half-within-two-years-strong-digi-push.html?/> / <https://www.straitstimes.com/business/banking/uob-to-upskill-900-staff-in-professional-conversion-programme>.

⁶⁷ "Unpacking DBS Asia Hub 2's hackathon approach and Digital Agenda," *Analytics India*, February 2019 <https://www.analyticsindiamag.com/deep-dive-unpacking-dbs-asia-hub-2s-hackathon-approach-digital-agenda/>

and information sharing. These are precisely the work principles that will help the bank succeed as an agile, customer-centric organization. Millennials also tend to value diversity, environmental sustainability, and a strong sense of purpose. Banks should engage new talent with a story, and purpose should be a big part of that story.

Invest in leaders

Another important factor in building the required skillsets and capabilities is leadership. Our research shows that ten percent of mid-level managers have a disproportionately large impact on value creation.⁶⁸ We have also seen that regardless of age or where they are in their careers, most employees consider the quality of leadership to be extremely important in choosing where to work. Organizations that regularly match their top performers with their most critical strategic priorities are 2.2 times more likely to outperform their competitors on total returns to shareholders.⁶⁹

Asia-Pacific's banks urgently need to build the workforce required to go head-to-head with digital attackers on productivity, customer experience, and market share. Banks that move fast to launch their end-to-end transformation and begin building an agile culture will have the advantage in attracting top talent.

As they consider how best to capture value in a consolidating market, industry leaders should debate the following ten questions:

1. What measures will we undertake to counter the trends sapping the strength of Asia-Pacific banks?
2. How could potential consolidation affect our market? Are we placed to take advantage and win in this situation, or are we at risk of losing out on opportunities?
3. What are we doing to increase productivity across different business units, functions, and geographies?

4. How well do we control risk costs and mitigate against declining asset quality?
5. How can we best capitalize on the high-growth opportunities in wealth management, retail lending, SME lending, and transaction banking?
6. How can we harness the power of partnerships to enhance our propositions, acquire new customers, improve transactions, and raise customer engagement?
7. Is there an opportunity for further M&A to acquire capabilities, increase scale, or generate value from additional synergies?
8. Where are we positioned in this digital age, and are we equipped with our infrastructure and our way of working to compete and win in the new, fast-paced environment?
9. Where are we on our data transformation journey? How will we unleash the power of data and analytics to generate superior returns?
10. Do we understand clearly how our workforce will change over the next five years? As we continue to build up our capabilities in digital and analytics, how much will we rely on hiring digital talent versus upskilling current employees?

Asia-Pacific banks must reinvent themselves or risk disappearing. At many organizations, the building blocks for a data-driven, customer-centric digital banking business are already in place. In order to carry through with the transformation, however, banks must acquire new tools, new skills, and new ways of working, including broader scope for cross-functional collaboration to deliver solutions to market quickly and build scale at low cost. In order to thrive, high-performing banks will likely acquire smaller organizations as a means to achieve synergies of scale, market share, technology, and talent.

⁶⁸ "Talent in wholesale banking: Building a sustainable competitive advantage," McKinsey.com, May 2019.

⁶⁹ Ibid.

Appendices

Appendix A: Comparing the drivers of ROE across six markets

The decline in return on equity (ROE) from 2014 through 2018 has been particularly dramatic in the top two Asia-Pacific emerging markets, with aggregate ROE of banks in China declining from 17.4 percent to 12.4 percent and in India from 11.3 percent to minus 2.0 percent.

We look more closely below at recent banking trends in six major Asia-Pacific markets.

- In **China**, interest margins have thinned as a result of interest rate liberalization and the subsequent lowering of policy rates. Risk costs have also cut into ROEs. As part of its deleveraging campaign, the People's Bank of China (PBOC) has reclassified loans overdue for more than 90 days as NPL, prompting banks to increase loan loss provisions for the corporate segment.
- **Japanese institutions** have actively expanded their loan books, but the growth in volume has not fully offset the extreme pressure of negative interest rates on lending margins (as is also shown in Exhibit B). One positive trend is that corporate tax cuts in recent years have helped to buttress bank profitability significantly.
- In **Australia**, competitive pricing on loans and deposits, rising funding costs, and the implementation of the Major Bank Levy in July 2017 have together exerted significant downward pressure on margins. However, the largest banks have improved productivity, focusing on digital capabilities, robotic process automation, machine learning, and cloud computing.
- **India's** banking sector has fallen into negative territory, as banks deal with mounting NPLs, approximately 90 percent of which were held by public sector banks (PSUs) in 2017. Public sector banks have lost lending market share to their private peers but government backing has enabled deposits to hold steady.
- **Other developed Asia-Pacific markets:** Thinning margins and high capital costs have pulled banking ROEs downward in most developed Asia-Pacific markets. South Korea alone has increased banking ROEs for the period from 2014 to 2018. This is due largely to declining risk costs (following a spike in corporate NPLs, including in the shipping industry) and recent improvements in cost efficiency. The cost-to-income ratio for South Korean banks declined from 61 percent in 2015 to 58 percent in 2018, as net interest margins (NIMs) have risen and banks continue cost optimization efforts. In Hong Kong, the relatively modest increase in Hong Kong dollar interbank rates weighs heavily on banks' margins and profitability. In addition, Hong Kong banks increased their Tier-1 capital reserves to 16.4 percent in 2018, up from 13.5 percent in 2014. In Taiwan, competition in a crowded banking market has kept margins thin.
- **Other emerging Asia-Pacific markets:** Indonesian banks have maintained NIMs of between five and six percent by slashing deposit rates more aggressively than lending rates in response to the central bank's efforts to push banks' NIMs to single digits. They have also shifted to higher-margin products. At the same time, Indonesian banks have set aside more capital in response to stricter reserve requirements. Risk costs for Indonesian banks are also relatively high (e.g., NPL ratio of approximately 2.6 percent), due mainly to the weakened commodities market and high levels of corporate debt. In Malaysia, aggressive competition for deposits continues to exert significant downward pressure on NIMs, which improved only slightly from 1.75 percent in 2016 to 1.87 percent in 2018. Capital costs have also risen, as banks build a cushion against rising corporate and household debt. Vietnam has bucked the downward trend in Asia-Pacific banking returns, with ROE growing from 7.3 percent in 2014 to 12.2 percent in 2018, primarily due to stronger margins and lower capital reserves.

In most markets, the impact of lower margins has been tempered by more cost efficiency; emerging markets have struggled with rising risk costs.

ROAE for Asia-Pacific markets,¹ 2014-18, %

CAGR 2014-18 ■ Below -1% ■ Between -1% and 0% ■ Between 0% and 1% ■ Above 1%

| | ROAE 2014, % | + Margin | + Risk cost ² | + Cost efficiency ³ | + Taxes | + Fines and others ⁴ | + Capital | = ROAE 2018, ⁵ % |
|---------------------------|--------------|----------|--------------------------|--------------------------------|---------|---------------------------------|-----------|-----------------------------|
| Asia-Pacific | 12.8% | -4.9% | -2.3% | 3.2% | 1.5% | 0.0% | -0.2% | 10.1% ▼ |
| Developed markets | | | | | | | | |
| Australia | 14.6% | -2.6% | 0.7% | 1.2% | 0.6% | -0.4% | -1.3% | 12.9% ▼ |
| Hong Kong | 13.9% | -1.2% | 0.4% | 0.3% | 0.3% | 0.2% | -1.5% | 12.3% ▼ |
| Japan | 6.3% | -5.2% | 0.3% | 2.7% | 1.3% | 0.0% | 0.1% | 5.4% ▼ |
| Singapore | 11.8% | -0.8% | 0.8% | -0.1% | 0.1% | 0.0% | 0.3% | 12.1% ▲ |
| South Korea | 4.5% | -0.7% | 3.4% | 1.5% | -1.0% | -0.5% | 1.3% | 8.5% ▲ |
| Taiwan | 9.7% | -2.7% | 0.1% | 1.3% | 0.2% | -0.6% | 0.1% | 8.2% ▼ |
| Emerging markets | | | | | | | | |
| Mainland China | 17.4% | -8.0% | -3.7% | 5.5% | 2.1% | -0.1% | -0.6% | 12.4% ▼ |
| India | 11.3% | -2.9% | -14.7% | -2.9% | 6.7% | 0.5% | 0.1% | -2.0% ▼ |
| Indonesia | 17.4% | -4.6% | -1.0% | 2.8% | 0.6% | 0.0% | -2.0% | 13.2% ▼ |
| Malaysia | 12.8% | -1.9% | 0.1% | 1.0% | 0.4% | -0.1% | -1.3% | 10.9% ▼ |
| Thailand | 14.0% | 1.1% | -2.2% | -0.1% | 0.8% | 0.0% | -1.8% | 11.7% ▼ |
| Vietnam | 7.3% | 2.9% | 1.7% | -0.7% | -0.4% | -0.4% | 1.9% | 12.2% ▲ |
| Rest of APAC ⁶ | 14.2% | -6.4% | -2.1% | 2.2% | 0.1% | 0.2% | 0.8% | 9.1% ▼ |

¹ Based on a sample of 700+ banks and non-bank financial institutions in Asia.

² Loan loss provisions to average assets.

³ Operating cost to average total assets.

⁴ Includes the residual after operating expenses and taxes.

⁵ ROAE figures might not add up due to rounding.

⁶ Includes Philippines, New Zealand, Pakistan, Kazakhstan, Sri Lanka, Myanmar, Cambodia, and Laos.

Source: SNL; McKinsey Global Banking Pools

Exhibit B

Growth in volumes drives Asia-Pacific banking profitability; interest, fee, and risk-cost margins remain under pressure.

2014-18 pre-tax profit¹ change by driver,

\$ billion

■ Increase of more than \$3 billion ■ Increase of less than \$3 billion ■ Decline vs. 2014 pre-tax profit

| | Developed Asia-Pacific markets | | | | | | Emerging Asia-Pacific markets | | | | | | |
|------------------------|--------------------------------|-------------|--------|--------|-----------|-----------|-------------------------------|--------|-----------|----------|----------|---------|---------------------------|
| | Australia | South Korea | Japan | Taiwan | Singapore | Hong Kong | Mainland China | India | Indonesia | Malaysia | Thailand | Vietnam | Rest of Asia ³ |
| Loan volume | 3.2 | 0.5 | 7.8 | 1.1 | 1.7 | 2.9 | 105.6 | 3.5 | 2.3 | 0.3 | 1.6 | 0.8 | 1.6 |
| Deposit volume | 1.3 | 1.5 | 13.6 | 1.8 | 1.4 | 2.5 | 28.2 | 4.2 | 0.8 | 0.1 | 1.0 | 0.4 | 1.3 |
| Net interest margin | (5.0) | (5.9) | (46.9) | (1.5) | (0.4) | 2.0 | (158.3) | (6.4) | (2.8) | (2.5) | (0.5) | 0.1 | (1.9) |
| Fee margin | (3.9) | (1.0) | (9.6) | (0.9) | (0.3) | (1.5) | (14.1) | 2.0 | (0.2) | (0.8) | 0.3 | 0.3 | (4.0) |
| Other income | (5.1) | 0.4 | (9.4) | (1.1) | (0.5) | (2.0) | (13.0) | 0.6 | 1.0 | 0.1 | (0.2) | (0.2) | 0.6 |
| Risk cost ² | 1.8 | 7.5 | 2.9 | 0.1 | 1.3 | 0.7 | (66.9) | (28.6) | (0.7) | 0.2 | (1.3) | 0.7 | (2.1) |
| Operating cost | 7.4 | 5.8 | 35.4 | 1.5 | (0.1) | 0.2 | 123.2 | (6.2) | 1.4 | 1.8 | 0.6 | (0.1) | 1.2 |
| Pre-tax profit | (0.2) | 8.8 | (6.2) | 1.0 | 3.1 | 4.8 | 4.6 | (30.8) | 1.7 | (1.0) | 1.4 | 2.1 | (3.3) |

¹ Based on a sample of 700+ banks and non-banking financial institutions in Asia

² Loan-loss provisions to average assets.

³ Includes Philippines, New Zealand, Myanmar, Kazakhstan, Cambodia, Laos, and Pakistan.

Source: SNL; McKinsey Global Banking Pools

Appendix B: ROE estimates in four potential scenarios

Our analyses estimate banks' anticipated returns on equity (ROEs) from 2018 to 2023 in six major markets of Asia, according to four different scenarios: slower growth, golden age, digital disruption, and dual threat. While there is considerable uncertainty about how various forces will affect the performance of Asia's banking sector over the next five years, four possible growth scenarios emerge from the interaction of macroeconomic forces with the pace of digital disruption.

- **Golden age:** Faster economic growth and higher regulatory scrutiny of financial innovation slows the pace of disruption (i.e., evolutionary disruption). Fully optimized and digitized traditional banks and ecosystem orchestrators that are able to capitalize on macroeconomic conditions to maximize growth would be the most likely models to thrive in a golden age scenario.
- **Slower growth:** Weak macroeconomic conditions due to intensified trade friction and maturing credit cycles combine with an evolutionary disruption (characterized by regulatory postures that are cautious toward innovation). This slow-growth environment would favor ecosystem orchestrators, banks focused on specific business segments, and low-cost "manufacturers" (e.g., white-label banks) that can keep costs low and sustain strong ROEs.
- **Digital threat:** Favorable macroeconomic conditions support modest revenue growth tempered by increasing competition due to revolutionary disruption. The digital threat scenario would favor technology leaders—i.e., fintech innovators and ecosystem orchestrators—that can offer distinctive products and superior customer experiences at low cost.
- **Dual threat:** An unfavorable macroeconomic environment and long-term structural issues combine with regulatory postures that are highly favorable toward innovation, leading to revolutionary disruption and significant erosion of bank profitability. To compete successfully in a dual threat scenario requires a low-cost business model that can build scale rapidly. Ecosystem orchestrators would be the most likely model to prevail in a dual threat scenario.

To illustrate the range of potential challenges and opportunities, we have estimated future banking ROEs in six markets for each scenario. Exhibit C shows ROE estimates for "unmitigated" circumstances. Exhibit D shows ROE estimates for "mitigated" circumstances, where banks take broad steps to improve efficiency, reduce risk cost, and optimize capital. With the exception of India, where banking ROEs are expected to rebound as banks recover from the spike in loan losses, we estimate that banking ROEs in Asia-Pacific will continue to fall, unless the "golden age" scenario plays out or banks carry out "no regret" moves to optimize costs (Exhibit C).

Cost optimization can mitigate unfavorable conditions in any scenario

Given the numerous uncertainties in global markets, it is, of course, impossible to know which scenario will actually play out. However, there are several "no regret" moves that practically all banks should undertake in order to survive, no matter how the market evolves. Asia-Pacific banks should continue strengthening the core, with special attention to productivity, risk management, and capital optimization. As the exhibit shows, the implementation of "no regret" cost optimization measures in each of these three areas has the potential to strengthen Asia-Pacific banking ROEs to a significant degree in each of the four scenarios (Exhibit D).

Different markets have different improvement opportunities, depending on asset quality, competitive conditions, economic conditions, median age, population density, and more. The following paragraphs summarize the key trends and mitigating measures that will likely determine the range of expected ROE performance for six major Asia-Pacific markets:

- **China:** China banking revenues are largely dependent on volumes, and results could vary widely according to macroeconomic circumstances. Retail lending is expected to grow faster than 13 percent annually from 2018 to 2023, and even commercial banks are extending loans to consumers in response to closer regulatory scrutiny of corporate lending. Competition is expected to mount both among conventional banks and digital innovators, leading to further compression of margins.
- Assuming that banks take no mitigating actions, banking ROEs in China could dip as low as

Apart from India, returns on equity are expected to decline in all scenarios except the Golden Age scenario, if unmitigated.

Projected return on average equity (ROAE) and revenue before risk costs (RBRC)



¹ Includes Indonesia, Malaysia, Thailand, and Vietnam.

² Includes Hong Kong, South Korea, Singapore, and Taiwan.

Source: SNL; McKinsey Global Banking Pools; McKinsey Profit Simulation Model

eight percent in the event of a full-blown trade war coupled with a collapse in housing prices. However, if macroeconomic conditions are favorable and the pace of digital disruption gradual, ROEs could be as high as 14 percent.

With careful planning to optimize productivity, capital, and risk management, Chinese banking ROEs could range from 11 to 16 percent.

- **Japan:** The potential for growth in Japan’s banking sector will be capped in all scenarios,

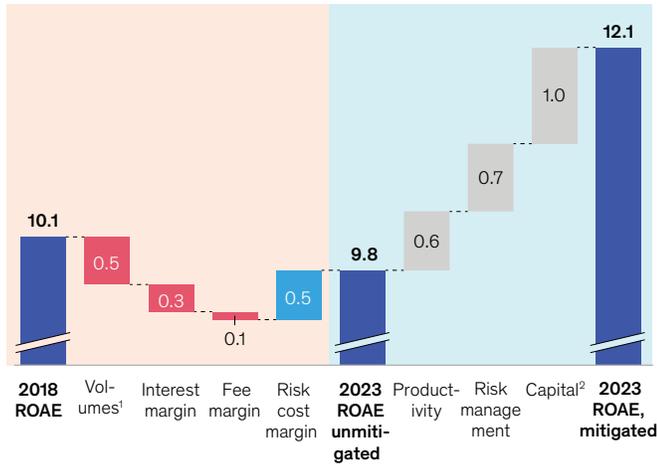
due to the low-growth environment, aging population, and lower productivity. Cost-to-income (C/I) ratios are typically higher than 50 percent. Modest volume growth combined with a faster increase in capital (due to revised risk weights on exposure to small unrated corporates in line with the new Basel framework) would lead to a negative impact on banks’ ROEs. Downward pressure on interest and fee margins—already razor thin—will likely continue. However, transaction banking and retail wealth revenues

Industrywide improvements in productivity, risk management, and capital management could boost returns on average equity in each scenario.

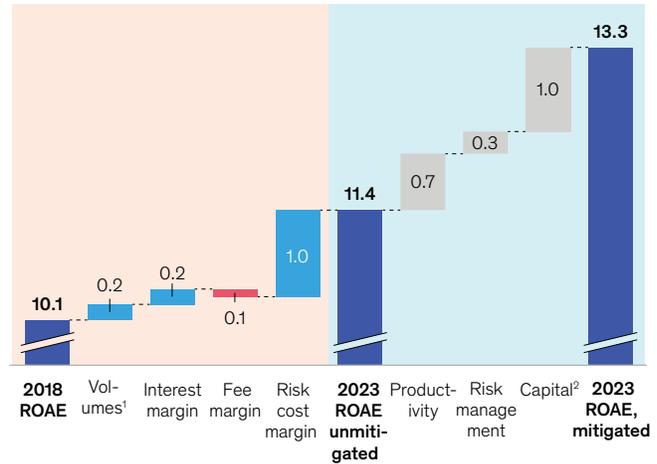
Asia-Pacific - Return on average equity decomposition, %, estimates

Uncontrollable factors Controllable factors

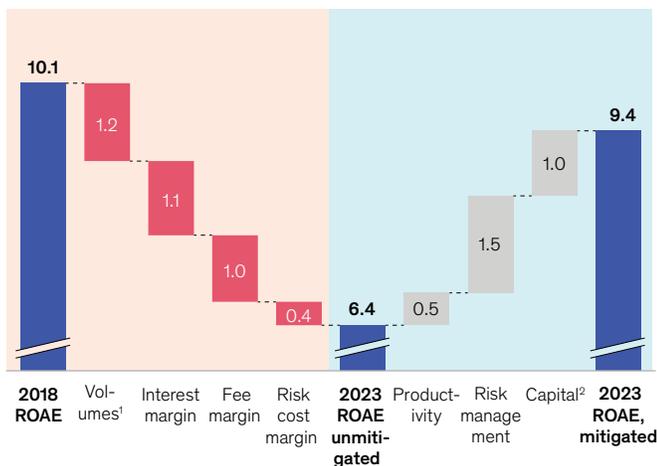
Base: Slower growth



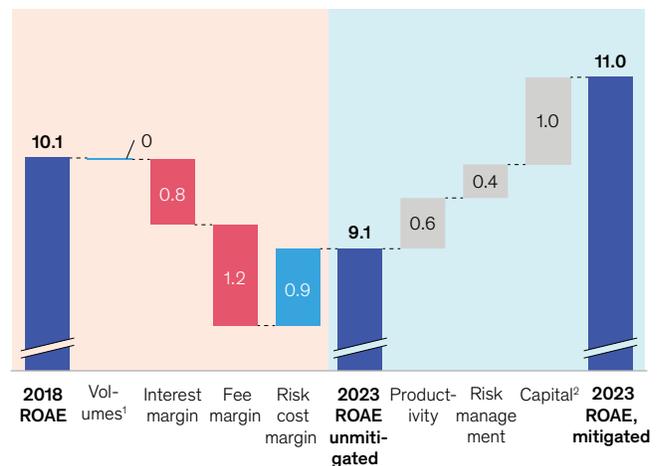
Golden age



Dual threat³



Digital disruption



NOTE: Total figures might not add up due to rounding.

¹ Includes impact of capital, which is assumed to be same across scenarios and estimated by keeping asset-to-equity ratio constant.

² Based only on technical capital optimization without taking into account the impact of business levers for each scenario.

³ Takes into account severe drop in real estate prices and sharp increase in NPL ratios.

Source: SNL; McKinsey Global Banking Pools; McKinsey Profit Simulation Model

are expected to experience faster growth, due to widening margins as interest rates rise.

Given Japan's low-growth environment, banking ROEs are expected to range from four to six percent if banks take no action to mitigate the decline.

Japan's banks could potentially push ROEs to between seven to eight percent if they boost productivity and optimize capital.

— **Australia:** Australia has enjoyed above-average ROEs (12.9 percent in 2018) due to an emphasis on mortgage lending. High exposure to mortgage lending heightens the need for careful risk management. Risk-cost margins could potentially edge upwards if unfavorable macroeconomic conditions lead to tapering demand from China and further correction in housing prices.

The central bank has been relatively open toward digital challengers and competitive pricing could potentially drag ROEs for the industry down to 11 percent in a revolutionary disruption or even to 9 percent in a dual threat scenario.

- **India:** Risk-cost margins jumped from 130 bps in 2014 to 330 bps in 2018, following the Reserve Bank of India's increased scrutiny of bank assets. ROE fell into negative territory—minus 2.0 percent in 2018—and banks will continue to face pressure for the next two to three years. However, we expect the level of NPLs to decrease steadily, which will help to strengthen ROEs. Interest margins are expected to improve once NPLs are written off banks' books. In a scenario of fast-pace digital disruption, however, the impact of increasing competition would partially offset the improvements to interest margins. Cost efficiency is also critical, as C/I ratios are greater than 50 percent, and even higher among state-owned banks.

The Indian banking sector's ROE is expected to rebound to between seven and ten percent, as banks clean their balance sheets.

With careful risk management and cost optimization measures, India's banking sector could deliver ROEs between nine percent and 12 percent.

- **Other developed Asia-Pacific markets:** Hong Kong and Singapore have ROEs in the range of approximately 12 percent but will face margin pressure from increasing competition and moderate volume growth (typical of mature economies). Revenue growth is expected to remain within the same range for both retail and

wholesale banking (except in the dual threat and digital disruption scenarios, where margin compression will reduce retail revenues).

- In **developed markets**, unmitigated ROEs are expected to range from seven to 11 percent. If banks are able to boost productivity, ROEs could range from nine to 13 percent.

- **Other emerging Asia-Pacific markets:** Improvement in risk cost margins has already supported ROEs, which would otherwise have declined much faster in emerging markets. In Indonesia, Malaysia, Philippines, and Vietnam, NPL levels have been declining, a trend that we expect to continue. Improving risk management remains important, particularly in Malaysia and Thailand, where household debt is high. Wholesale banking revenues will likely grow slightly faster compared to retail banking in Asia-Pacific emerging markets, on account of recovery, as growth in wholesale lending slowed from 2016 to 2017 due to lower global demand. Within retail, further financial penetration is expected to sustain the growth of lending in emerging markets.

Weakening macroeconomic trends could pull ROE down to eight percent (without mitigation), driven in part by a potential rise in risk costs. However, in a supportive environment, there would be headroom for ROE levels to increase to 13 percent (from 11.2 percent in 2018), as banking penetration is low.

Banks could potentially deliver ROEs of between 10 and 15 percent in the mitigated scenario, if they focus on improving productivity and lowering risk costs.

Appendix C: Methodology of scenario analysis

Our analyses estimate banks' anticipated returns on equity (ROE) from 2018 to 2023 in six major markets of Asia, according to four different scenarios: slower growth, golden age, digital disruption, and dual threat. While there is considerable uncertainty about how various forces will affect the performance of Asia's banking sector over the next five years, these uncertainties can be broken down into a set of variables. We have analyzed each variable in order to quantify its potential impact on banking sector growth in a given market.

The general assumptions for each scenario

The four possible growth scenarios emerge from the interaction of macroeconomic forces with the pace of digital disruption.

A positive or favorable economic environment assumes fast growth in the economy driven by global recovery, a gradual fading of the current trade tensions between the US and China, and a faster rise in interest rates. An unfavorable economic environment would see negative trends like slower economic growth due to lingering structural issues (e.g., low productivity, aging population), continued intensification of protectionist trade actions, and slower global recovery. In addition, our scenario of unfavorable macroeconomic conditions assumes that any increase in interest rates would remain comparatively moderate.

In estimating the pace of digital disruption, we contrasted two scenarios. In an "evolutionary" disruption, we anticipate that incumbent banks will form various types of partnership with fintech innovators to pursue a gradual transformation of operating models, delivery channels, and customer expectations. In a "revolutionary" disruption, new entrants are able to launch innovative digital services and scale up rapidly due to supportive regulations. In this scenario, the intensity of disruption would be severe, and digital challengers would be able to capture significant market share.

We estimated "unmitigated" ROE by modeling changes in banking volumes, interest margins, fee margins, and risk costs according to the combined impact of the macroeconomic and digital disruption indicators described above. (These scenarios are "unmitigated" because the ROE estimates are calculated with the assumption that banks do not respond to any of the changes taking place in the macro environment.)

Impact of macroeconomic indicators on banking performance

- a. For volumes, we calculated the impact of changes in key economic variables (nominal GDP, nominal consumption, and nominal gross fixed investment) on banking volumes at product level (consumer finance, mortgages, wholesale lending, transaction banking, etc.) in both favorable and unfavorable economic circumstances based on correlation coefficients, which are calculated using panel regression models on historical data for the period from 2000 to 2018.
- b. To project changes in interest margins for each business, we examined historical pricing trends for the period from 2000 to 2018 and identified the degree of repricing and corresponding impact on margins with the change in interest rates for each product. Assuming constant repricing ratios, we estimated the impact on margins for each line of business, based on the interest rate differential in both favorable (faster growth) and unfavorable (slower growth) macroeconomic scenarios.
- c. To measure the impact of the credit cycle on markets, we looked at risk cost margins for each of the six markets and conducted *ceteris paribus* analyses on revenues: we examined the degree of change in risk-cost margins in negative and positive credit cycles. Based on historical sensitivity, we estimated the change in banks' risk margins while ensuring that historical peaks of risk costs during previous credit cycles did not exceed our forecasted levels.

Impact of digital disruption indicators on banking performance

- a. To estimate the impact of digital disruption on volumes, we examined digital banking penetration in each geography and estimated the digital adoption curve for each banking product (based on inputs from McKinsey's 2016 Retail Banking Consumer Survey). We then modeled anticipated volume growth trends for both evolutionary (slower) and revolutionary (faster) scenarios based on the digital adoption velocity of each market. Our assumption here is that in an evolutionary disruption scenario, increasing adoption of banking products through digital channels will benefit banks, as it will accelerate overall product penetration. By contrast, in a revolutionary disruption scenario, increasing adoption of digital banking will lead

to a negative impact on banks' volumes, as customers will switch to digital providers offering lower pricing and better customer experience.

- b. For interest and fee margins, we scanned global bank offerings to determine the pricing differences between traditional banks and new entrants (including both digital banks owned by incumbents and those owned by new entrants). Then we assume banks would reprice their product offering and close-in the margin gap in order to maintain the market share. In addition, multiple inputs from industry experts guide our estimations on the impact of digital disruption.

Mitigating impact of three cost levers

As noted above, we calculated the first set of bank ROE estimates for each of the four scenarios with the assumption that banks would take no steps to mitigate the changes taking place in the macroeconomic environment ("unmitigated" scenarios). We also calculated a second set of ROE estimates for each scenario, adopting the assumption that banks would implement mitigating

measures in three areas: productivity, risk management, and capital costs. These estimates are referred to as "mitigated scenarios."

In order to model the impact of these mitigating measures, we used benchmark analyses of best-performing banks' cost-to-income ratios and risk-cost margins. We assumed, first, that best-performing banks in a given market have identified practically achievable improvements and, second, that, other banks in the same market (subject to the current dynamics of the market) have an opportunity to close the gap to the level of best-performing banks on cost-to-income ratios and risk-cost margins, with a commensurate impact on ROE. Regarding capital costs, technical capital optimization is assumed to deliver an impact of one percent on ROE (based on inputs of industry practitioners and without considering the impact of business levers in each scenario).

Finally, we validated the results of our analysis and conclusions with experts from McKinsey and the industry.

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