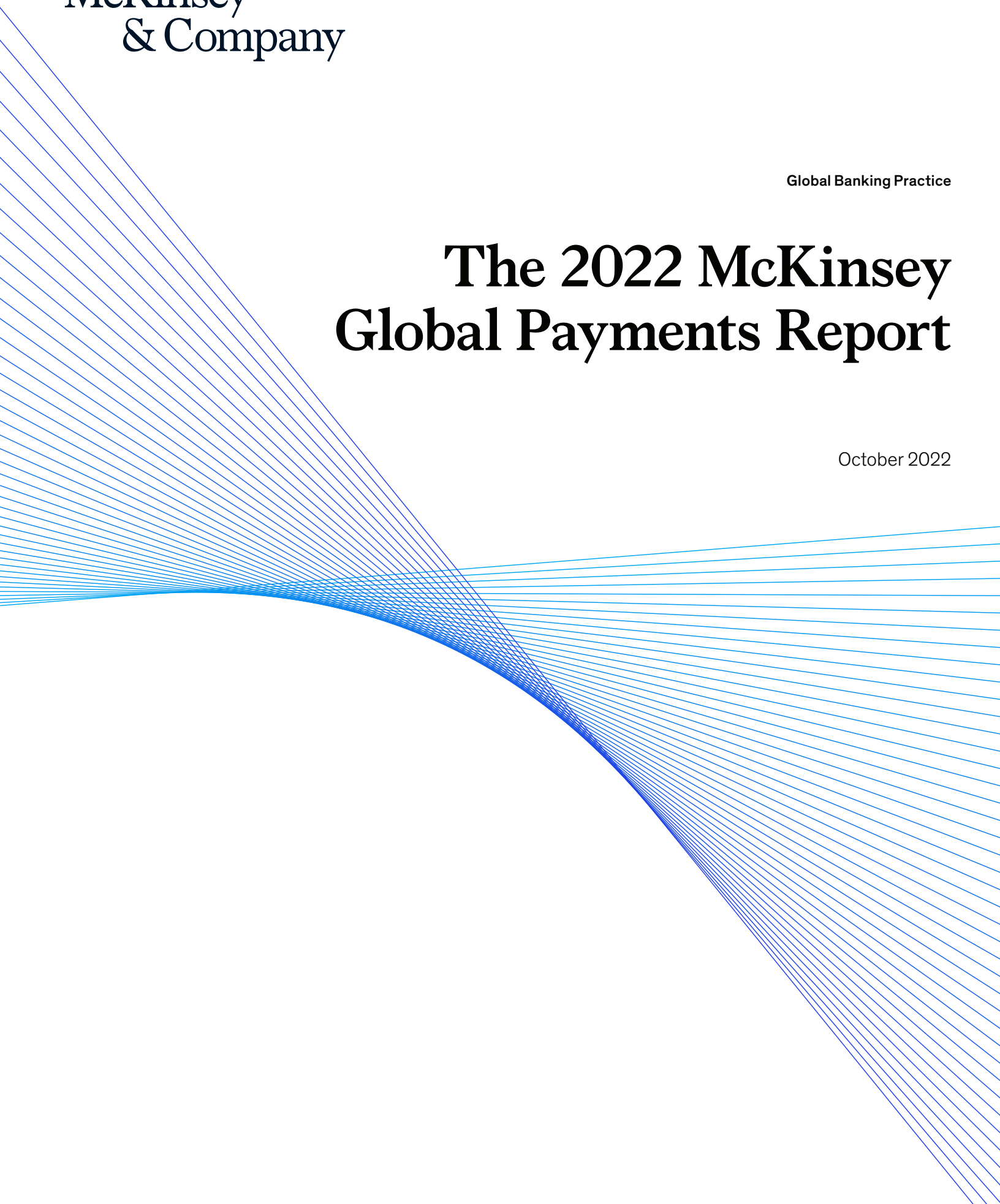


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# The 2022 McKinsey Global Payments Report

October 2022



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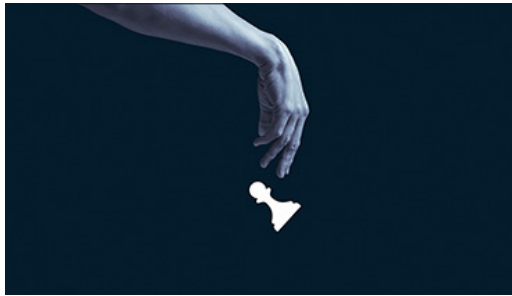
# The 2022 McKinsey Global Payments Report

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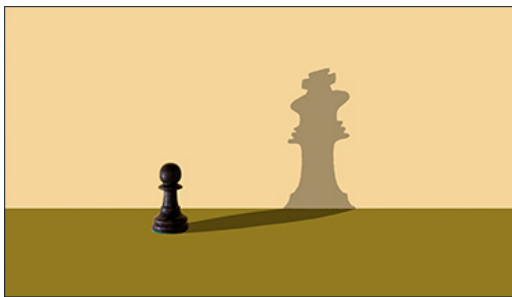
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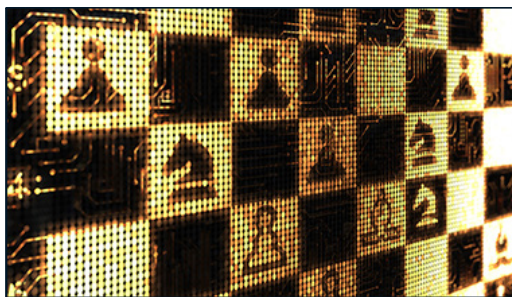
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# Foreword

In a period of ongoing macroeconomic and geopolitical upheaval, the global payments ecosystem is once again demonstrating resilience. In the previous *McKinsey Global Payments Report*, we described an annual decline in revenues for 2020, the first since 2009.<sup>1</sup> That decline, coming during the early stages of the pandemic, was less pronounced than anticipated.

At that time, we foresaw a nominal but geographically uneven rebound on the near-term horizon. As we describe in the lead chapter of this year's report, actual results proved more robust: revenue growth in 2021 was 11 percent, the highest since 2017, leading to a record \$2.1 trillion globally, and growth was healthy across all regions. Our five-year revenue outlook now exceeds prepandemic expectations, topping \$3 trillion by 2026.

As they often do, the drivers of growth are shifting, distributing gains in new ways and potentially to new and nontraditional participants. Inflation and interest rates are both reaching levels not seen for decades in many countries, altering consumer and business behavior and, consequently, payments dynamics. At the same time, capital market assessments of many fintech firms are undergoing recalibration—in some cases prompting companies to shift focus from pure growth to a profitability model.

The changes in the global landscape are creating new opportunities for incumbents and disruptors alike to win customers, develop new solutions, and claim market share. In short, the payments chessboard is being rearranged.

*The McKinsey 2022 Global Payments Report* presents a detailed analysis of the 2021 results and the insights they reveal, including regional and country-level nuances. The report's later chapters offer perspectives on areas where payments leaders' actions will help determine market share shifts and the role of payments in the broader financial ecosystem.

First, we examine a rapidly growing payments service: embedded finance, which involves the integration of a financial product into a broader customer journey. Brick-and-mortar versions have existed for decades in the form of auto loans at dealerships, sales financing at appliance retailers, and private-label credit cards at retail chains. Software companies are now partnering with banks and technology (or banking-as-a-service) providers to create similar seamless and convenient digital experiences. Leaders are already emerging in the race to provide banking infrastructure for embedded finance, and this chapter describes how incumbents and new entrants still have time to claim a share of this market.

We then turn to sustainability, which has become a topic of crucial importance for many corporations, including financial institutions. Sustainable global transaction banking remains in its early stages, but its potential for growth is estimated at 15 to 20 percent annually for sustainable trade finance and cash management products. Research indicates that demand for such products far exceeds supply, with only 10 percent of demand currently being met. Few banks currently embed sustainability into their transaction banking offerings, so there is a clear

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<sup>1</sup>"The 2021 McKinsey Global Payments Report," October 2021, McKinsey.com.

chance for leaders to capture a disproportionate share of the market. This chapter builds a case that banks should act now to create a sustainable payments value proposition.

In the next chapter, we take a fresh look at the early-stage development of central-bank digital currencies (CBDCs), which is occurring around the globe. Along with summarizing the various models under consideration, this chapter outlines the risks, opportunities, and potential paths forward for stakeholders and explains why we believe that the most promising scenarios involve public-private partnerships in which commercial banks play a material role.

In the final chapter, we examine how some of the fastest growth in digital payments over the past two years has been in emerging markets in Africa, Latin America, and Southeast Asia. In

these areas, the pandemic accelerated shifts to contactless payments and e-commerce, and low banking penetration affords opportunities for payments providers to capture untapped potential and reach underserved populations. Competition among banks, fintechs, telecom companies, and retailers has intensified as e-wallets proliferate, instant bank transfers take off, and industry players form partnerships to access capabilities and broaden their customer base. We explore which digital payments models are best placed to gain momentum in emerging markets, which monetization paths payments providers are likely to pursue, and what innovations may lie on the horizon.

As always, we welcome the opportunity to discuss these essential payments topics with you in greater detail.

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Global Banking & Securities

# The chessboard rearranged: Rethinking the next moves in global payments

Shifts in the macro environment are creating opportunities and obstacles for participants across the worldwide payments ecosystem.

*This article was a collaborative effort by Sukriti Bansal, Luca Bionducci, Philip Bruno, Olivier Denecker, and Grace Klopčic, representing views from McKinsey's Payments Practice.*



The global payments industry demonstrated its resilience again in 2021, more than recouping the revenue erosion experienced in 2020, which was the sector's first decline since the 2008–09 financial crisis. Our five-year revenue outlook now exceeds prepandemic expectations, topping \$3 trillion by 2026. The factors fueling this expected growth have shifted in unexpected ways.

Payments industry revenues rebounded strongly in 2021, growing at an 11 percent rate—more robust than we forecast last year and reaching a new high of \$2.1 trillion globally. Growth was strong across all regions, with both Asia–Pacific (APAC) and Europe, the Middle East, and Africa (EMEA) registering double-digit gains. Fee-based revenue continues to increase at a faster rate than net interest income and comprises more than half of the total (although this trend may soon reverse, as we will discuss).

Looking forward, a confluence of events is reshaping the payments landscape. After more

than a decade of low inflation and interest rates, many central banks—particularly in Europe and North America—have shifted their policies, leading to rapidly rising interest rates. Geopolitical factors, capital market resets, commerce expectations, technology advancements, and societal responsibilities are creating more pronounced sector and regional dynamics as well. This rapidly evolving landscape will create new opportunities for incumbents and disruptors alike to win customers, develop new solutions, and claim market share, reshaping the competitive chessboard.

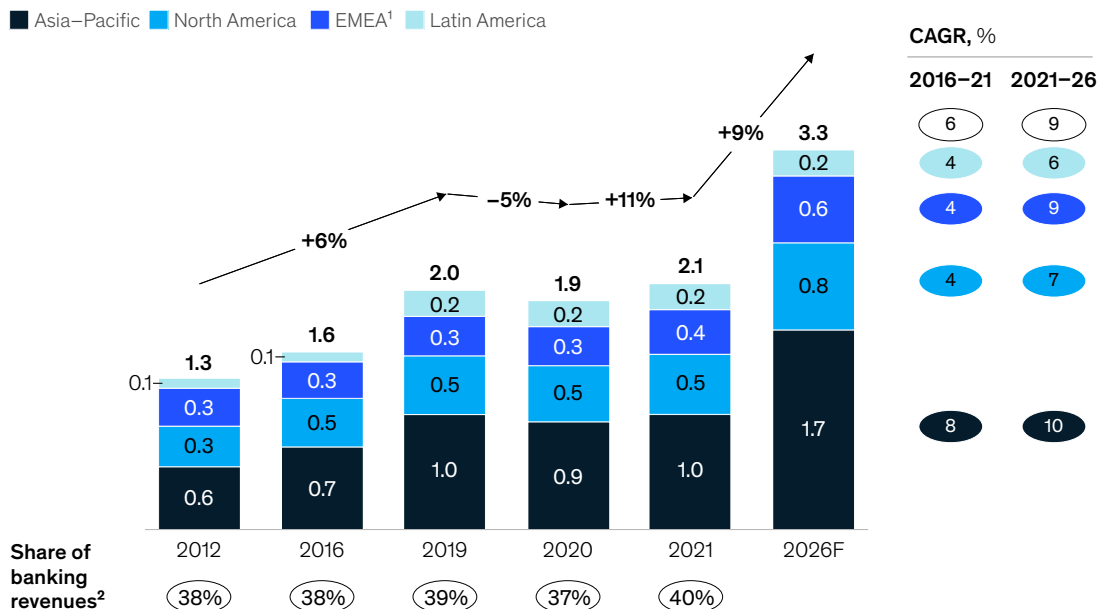
### A closer look at 2021

Payments revenues recovered rapidly from 2020's nominal contraction: Global revenue growth exceeded expectations by not only recouping 2020's pandemic-driven 5 percent decline but also registering a new high of \$2.1 trillion (Exhibit 1). Including 2021's 11 percent increase, revenue growth over the past two

Exhibit 1

## Global payments revenues increased 11 percent globally in 2021.

Global payments revenues, 2012–26F, \$ trillion



<sup>1</sup>Europe, Middle East, and Africa.

<sup>2</sup>Total banking revenues excludes Capital Markets and Investment Banking (CMIB) revenues. Given the current macroeconomic volatility, payments share in banking revenues for 2026 are not forecast.

Source: McKinsey Global Payments Map

years has averaged 3 percent—below the long-term trend but well above the outcome feared by many.

Demonstrating the resilience of the payments industry, overall electronic payment transactions grew at a 19 percent rate in 2021—in line with prepandemic growth rates. Global e-commerce registered growth of roughly 17 percent, primarily driven by China, which now accounts for roughly half of global retail e-commerce sales.<sup>1</sup> The most dramatic COVID-19 impact can be seen in cash usage, which plummeted by 15 percent in 2020. As physical stores reopened in 2021, the cash rebound some expected did not materialize. The slight 1 percent uptick in usage indicates that the vast majority of transactions that migrated to electronic

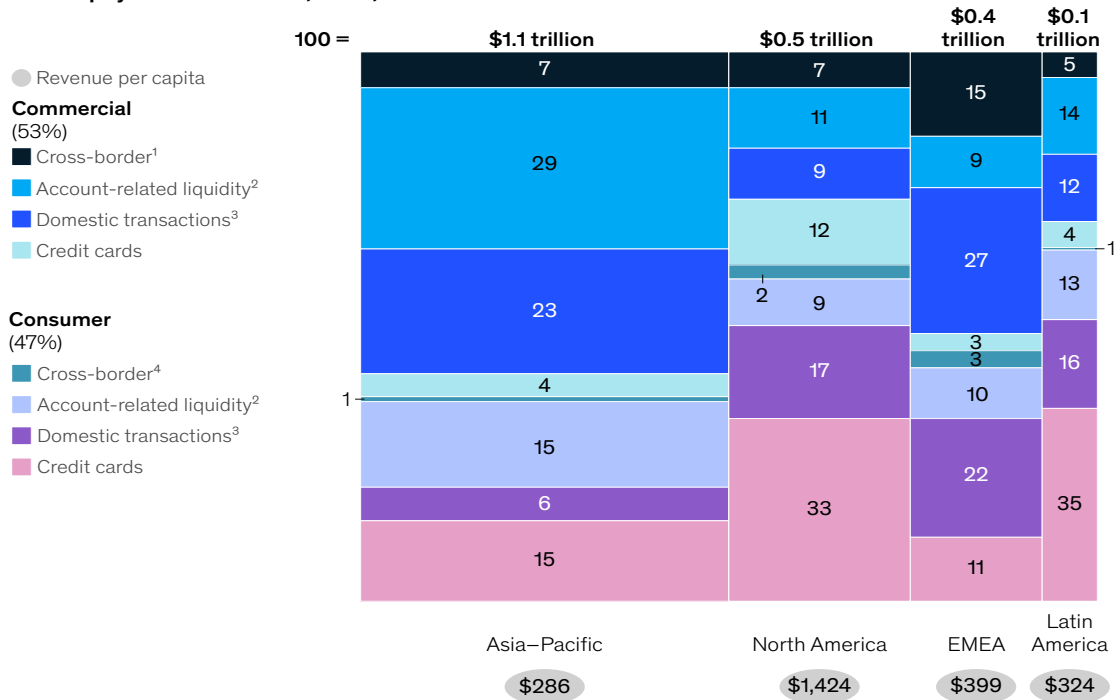
channels in 2020 have remained electronic. Within the European Union, for instance, Greece and the Czech Republic had the sharpest reductions in cash usage from 2019 to 2021—15 percentage points and 12 percentage points, respectively.

Revenue growth was strong across all regions in 2021, surging to 13 percent in both Asia–Pacific and EMEA. The robust performance of Asia–Pacific, the largest regional revenue pool, accounted for 57 percent of global revenue growth, and China accounted for 88 percent of Asia–Pacific’s growth, largely centered on account-to-account (A2A) activity (Exhibit 2). EMEA’s increase reflected more broad-based growth in electronic transactions. Latin America and North America each grew at a

Exhibit 2

### Asia–Pacific accounts for over half of global payments revenues.

Global payments revenues, 2021, %



<sup>1</sup>Cross-border payment services (B2B, B2C) and documentary trade finance.  
<sup>2</sup>Net interest income on current accounts and overdrafts.  
<sup>3</sup>Fee revenues on domestic payment transactions and account maintenance (excluding credit cards).  
<sup>4</sup>Remittance services and C2B cross-border payment services.  
 Source: McKinsey Global Payments Map

<sup>1</sup>Karin von Abrams, "These are the top global ecommerce markets," Insider Intelligence, July 14, 2021, insiderintelligence.com.



still-robust 7 percent but were limited by credit card economic headwinds. Average US revolving card balances began to recover in the second half but ended 2021 with a decline relative to 2020, while net interest margins simultaneously contracted. US banks also struggled to deploy a surge in deposits driven by pandemic stimulus, leading to compressed net interest margins on transaction account balances. In Latin America, balances were flat in contrast to historically strong growth, and interest margins similarly tightened.

A2A transaction revenues continued to increase their contribution in most geographies, in total accounting for roughly 29 percent of 2021's rise in global revenue. The expansion of applications built on instant-payment use cases—such as bill payment, point of sale (POS), and e-commerce—fueled the volume increase. Growth varies by country, with Hong Kong, Colombia, and Peru registering increases of roughly 50 percent and a tier of countries including Nigeria growing in the 30–40 percent range. Many European countries continued to grow at rates well into double digits, even from well-established bases. In the US, growth rates for instant payments surpassed 60 percent, albeit off a relatively small base. At this stage of maturity, there remains room for a breakthrough that sparks an even higher US growth rate. In Asia, pricing was a bigger revenue factor than volume growth. In 2021, China rolled back much of the corporate rate concessions implemented during the pandemic; prices moved from approximately \$0.79 per transaction in 2019 to about \$0.62 in 2020, returning to about \$0.77 in 2021. Overall, we project global growth of instant payments to continue at double-digit rates, even faster than the healthy 10 percent growth rates for cards over the past two years.

Debit and credit card transactions continued to grow at rates comparable to those before the pandemic (20 percent and 18 percent, respectively, between 2020 and 2021), as A2A growth mainly cannibalized cash and, to a lesser extent, checks, rather than card transactions. Credit cards' volume

growth overturned expectations that 2020's slowdown in card usage and ongoing pressure on interchange revenue was a sign of a longer-term trend. However, debit cards have extended their lead as the most used card product, with 94 transactions per capita globally, versus 49 for credit. The share of debit card among overall electronic transactions is highest in Russia (84 percent), followed by Norway, Ireland, and Romania (each roughly two-thirds).

There remains significant country-level dispersion in revenue per transaction, driven by a variety of factors, including transaction pricing dynamics and payment instrument mix (Exhibit 3). Our analysis of payments revenue per capita shows that this metric tends to be lower in developing economies, implying ongoing revenue opportunity as these countries' payment systems continue to mature. In addition, global revenue per non-cash transaction has gradually declined—from \$1.88 in 2016 to \$1.30 in 2021—as the pool of electronic transactions has grown faster than absolute revenue.

Global trade flows recovered in 2021, growing by 27 percent and exceeding 2019's prepandemic levels.<sup>2</sup> Increasing commodity prices were the biggest factor, along with the release of pent-up demand. Emerging markets generated the greatest trade flow increases in 2021, led by Africa (43 percent), Latin America (38 percent), and Asia–Pacific (26 percent), with developed markets growing in the 20 percent range. Following this rebound, however, we expect trade flow growth to slow to 1–2 percent annually through 2026 due to muted global economic forecasts. The developing global macroeconomic context might further reduce this expectation. For instance, geopolitical headwinds will reduce Eastern European flows by a projected 4 percent in 2022.

Our five-year revenue outlook anticipates average annual growth of 9 percent over the period—well above the historical long-term trend of 6 to 7 percent. Much of the incremental gains are

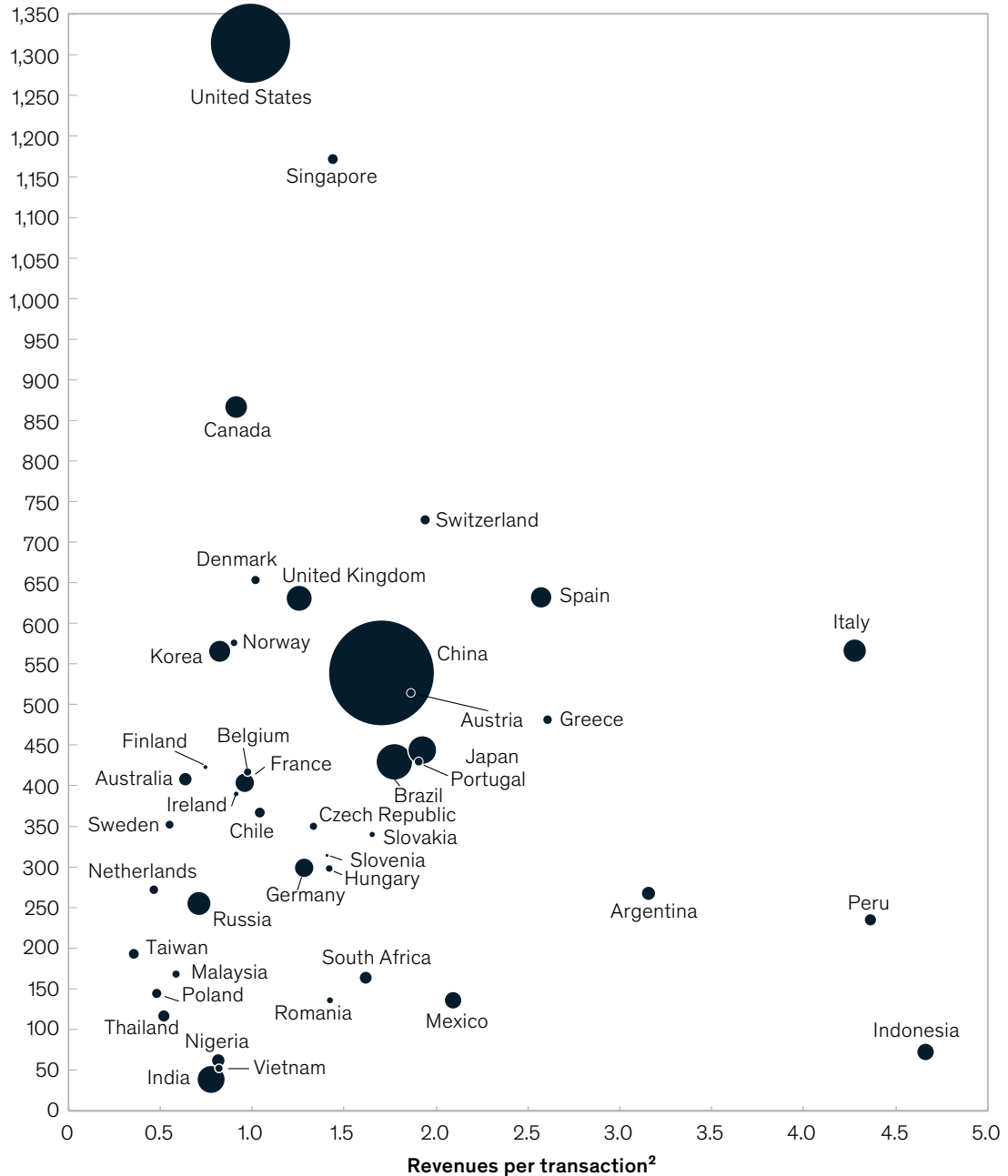
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<sup>2</sup> Data for the 46 countries covered by the McKinsey Global Payments Map.

Exhibit 3

Payments revenues per capita and per transaction vary markedly by country.

Payments revenues,<sup>1</sup> 2021, revenues per capita, \$



<sup>1</sup>Domestic payments revenues excl. revenues for cash withdrawals and deposits. In addition to the countries on the chart, McKinsey Global Payments Map has detailed payments data for Hong Kong, Colombia, Morocco, and Pakistan. In 2021, these countries had payments revenues per capita of ~\$2,300 (Hong Kong), ~\$235 (Colombia), ~\$125 (Morocco), and \$25 (Pakistan).

<sup>2</sup>Noncash transactions only.

Source: McKinsey Global Payments Map

fueled by interest-related income, a by-product of inflationary pressures and a rate environment many regions have not experienced for decades (Exhibit 4). Although interest rates are notoriously difficult to forecast, we consider the payments sector to be well positioned to exceed the \$3 trillion mark by 2026 or sooner. These macroeconomic factors are among several rearranging the chessboard and calling for a renewed strategic focus.

### Looking ahead: Six forces reshaping the landscape

At a top-line level, our outlook for global payments through 2026 is remarkably favorable, with projected average annual revenue growth of 9 percent. These gains will be distributed quite differently than in the past, however. Which players will capture the future revenues will depend on actions they take to capitalize on the opportunities created by six forces reshaping the landscape:

**1. Macroeconomic environment.** In many regions of the world, inflation is at its highest level in decades, potentially calling for changes in the

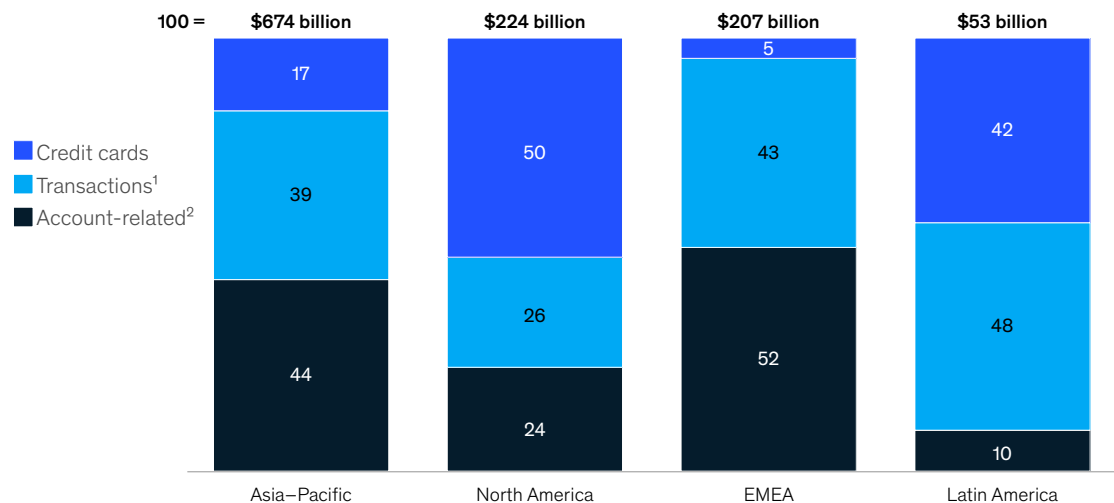
business models of payments providers and other financial services firms alike. In this context, a central bank response to inflation may serve to expand interest margins, generating more income from this side of the payments equation, primarily for deposit-holding parties such as banks. The combination of inflation and interest margins, in turn, will require changes in the cash management strategies of businesses and consumers. At the same time, factors like the global energy and commodities environment create economic-growth uncertainties and increase the likelihood of recession, differing by region. This, in turn, will have impact on the liquidity and investment strategies of many companies and households, altering payments economics on both the demand and supply sides.

**2. Geopolitical environment.** Geopolitical disruptions are altering the long-standing trend toward globalization, prompting moves to greater payments regionalization and localization. Instances of regional and domestic networks with local control over key infrastructure are proliferating, challenging the standardization of

Exhibit 4

### Revenue growth is dominated by credit cards in the Americas and by account-related revenues in Asia-Pacific and EMEA.

Composition of growth in regional payments revenues, 2021–26F, %



<sup>1</sup>Change in fee revenues on domestic and cross-border payment transactions, excluding credit cards.  
<sup>2</sup>Change in income on current accounts and overdrafts.  
 Source: McKinsey Global Payments Map

solutions across geographies. An increasing number of countries are looking to ensure local instances of payment services and key infrastructures, likely leading to increased complexity in local regulations and requirements.

**3. Capital markets reset.** While “attacker” payments companies significantly outperformed both the broader market and “incumbent” payments players over the last few years in the capital markets, 2022 saw a significant reset in valuations. In the 12 months ending August 2022, these same attackers delivered a negative 70 percent return to shareholders, compared to negative 26 percent for incumbents. This valuation reset creates opportunities across the landscape as incumbent companies consider acquisitions and attackers focus on sustainable growth and a path to profitability.

**4. Commerce expectations.** A main driver of the past high valuations of fintechs and attackers was the expectation of revenue growth through expanding customer relationships. This opportunity persists as payments increasingly serve an integrated, value-added commerce role rather than merely executing a stand-alone financial or money movement transaction. The most common current embodiment of this trend is commerce facilitation, extending beyond checkout and payment to enhance the commerce journey. The most promising for the future is embedded finance, or integrating finance products into nonfinance ecosystems. Players that can monetize services and data are poised to capture a larger share of revenue pools.

**5. Technology modernization.** After a long period of mostly incremental upgrades to networks, and to bank and business payment systems, companies are now making more structural as well as de novo infrastructure improvements. For instance, banks are aggressively modernizing their core systems to real-time, third-generation cores and updating their payments infrastructures, largely in response to the continued rise of instant payments, open-banking requirements, and cloud technology. We forecast that several regions will enter the next S-curve on instant-payment transaction growth. In addition, with the continued growth of embedded finance, digital natives’ expectations for how those services are delivered will continue to exert

pressure on providers to modernize their payments infrastructure.

**6. Social responsibility.** The overall momentum for social responsibility in business—often characterized under the environmental, social, and governance (ESG) banner—also is changing the context for payments. Governance covers the need for banks to act as gatekeepers against money laundering, fraud, and other unauthorized access to payment systems, and it is a major driver of investment and operational change across the industry. Inclusion and customer protection also are increasingly central to the missions of payments players.

In the following exploration of these six forces, we will assess their projected impact on payments revenue and offer ideas of how players across the ecosystem can adjust to and thrive in the new landscape.

### **The macroeconomic environment: Higher interest rates and inflation**

Just as the primary drivers of payments revenue differ across the four major geographic regions, the impact of inflation and interest rates on revenue will vary geographically as well. In most regions, interest rate increases are expected, which will benefit markets more dependent on deposit balances, such as Europe and Asia. However, China, which accounts for roughly three-quarters of Asia-Pacific payments revenues, is reducing its interest rates as of this writing.

Higher rates typically correlate with larger net interest margins on transaction account balances, which, in turn, generate liquidity-related revenue. These effects tend to materialize gradually, partly because of the rolling averages and maturity matching applied to calculate revenues. At the same time, offsetting effects may come from consumers and businesses shifting balances away from transaction accounts to other deposit vehicles in pursuit of higher rates—and from banks responding by paying higher rates to retain deposits. One example is the expected near-term elimination of negative interest rates on client deposits, which creates an immediate negative impact on bank revenues.

Inflation, in contrast, will create an organic uplift for the transactional components of payments revenue priced as a percentage of value, such as credit card interchange. Fixed transaction-based fee components might remain unchanged, potentially creating a drag on profits as related costs are rising under influence of the same inflation. Consequently, inflation could disproportionately hurt business models relying on per-transaction pricing (such as processing or most A2A services) while leaving volume-based revenue models (like credit card merchant acquiring) unscathed.

Many current payments leaders have not yet navigated a high-interest-rate, high-inflation environment, and some emerging payment products and models—for example, buy now, pay later (BNPL)—are similarly untested under such conditions. Assuming the credit challenges of a potential downturn can be managed, traditional players like banks and card issuers could be well positioned for this macro environment, given that liquidity primarily accrues to account-holding institutions. Higher interest rates can partially soften profitability pressure on banks and may provide headroom to invest in strategic initiatives, such as payments and digital. However, an economic downturn, the potential for which varies by region, would alter this equation.

### **Geopolitical environment: Payments regionalization and localization**

Recent geopolitical events in 2022 have reinforced a growing trend of electronic payments infrastructure taking on heightened importance for national and regional governments. As discussed in prior Global Payments Reports, many countries have invested in modern instant-payment systems and are championing the use of these domestic schemes compared with nonnative alternatives. The focus is shifting to building applications and value-added services (such as functions that issue requests for payment) that leverage these rails to boost uptake and usage after sometimes-slow adoption starts.

In addition to instant payments, local networks are being established to reduce dependency on international providers or to support local

policy agendas. Deployment of POS and online applications of local payment solutions, using economic models and access rules that differ from those of international solutions, allow countries to boost inclusion and grow local e-commerce—for example, Pix in Brazil, UPI in India.

A by-product of the focus on regional and national payments infrastructures will be the increased complexity of regulations across markets. Fragmentation and the need to localize will likely create continued disconnections across compliance and security requirements, despite ongoing international dialogue to standardize. This creates opportunities for payments providers that can simplify cross-border payments for customers or create turnkey solutions for related services—say, know your customer (KYC) as a service, digital ID, and security.

Geopolitical events and sanctions have also had an impact on trade and treasury international payments, strengthening regional bonds and creating shifts in segments and geo-corridors. The trend toward reshoring and nearshoring that emerged in 2020 continues to develop. What was initially believed to be a temporary strain on global supply chains has proven to be a persistent issue, with disruption affecting several sectors, including automotive and electronics. Ongoing logistic disruptions, elevated shipping costs, and stress on global supply chains are prompting initiatives to diversify suppliers and simplify shipping requirements. The trade corridor mix may shift as a result, although such transitions develop over years rather than months. For example, a number of the world's largest tech manufacturers have recently shifted a significant share of their production of hardware peripherals and small electronic devices to different countries.

In this environment, banks active in the arenas of trade finance and supply chain finance need to consider how to reposition their strategies. As companies reconsider their supply chains, what is the best way to capture this reshoring trend? Which products and what differentiation can help maintain or increase relevance in a complex trade finance environment?

## Capital markets reset: Turning unicorns into workhorses

Although payments companies' return to shareholders has markedly exceeded that of financial institutions over the past decade, the story over the most recent year has been quite different. Many payments companies have been greatly affected by changes in investor expectations and macroeconomic conditions, as evidenced by an average 38 percent decline in total shareholder returns (TSR) in the 12 months spanning August 2021 through August 2022—significantly greater than the decreases experienced in the banking sector (10 percent), the overall market (13 percent), and among technology companies (26 percent). Market environment changes have had a particularly strong impact on attacker payments companies, which generated negative 70 percent TSR over the same 12 months (versus 26 percent for incumbent payments companies) and experienced sharp reductions in

EBITDA multiples<sup>3</sup>: from approximately 80 times in August 2021 to 29 times in August 2022 (Exhibit 5).<sup>4</sup>

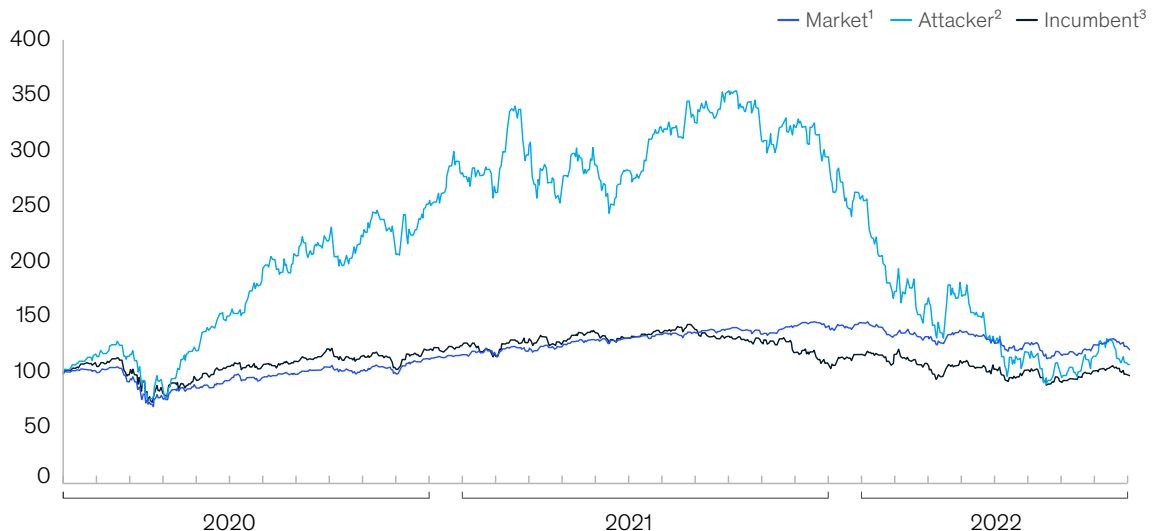
One cause of the change in valuations is a stark moderation in growth expectations: After attackers grew revenues 68 percent per year from 2019 to 2021, consensus analyst growth estimates for 2021 to 2023 have receded to 19 percent annually. Meanwhile, analysts expect the revenue growth rates of incumbent payments companies to remain relatively unchanged at 10 percent, compared with 11 percent from 2019 to 2021. In essence, attacker firms relinquished the disproportionate shareholder returns realized since early 2020 and are now performing roughly on par with incumbent payments firms over a two-and-a-half-year horizon.

Within payments, some segments have shown greater resilience than others. In particular, "payments scheme" operators have felt the least impact from changes in investor expectations and

Exhibit 5

**'Attacker' payments companies have given back their shareholder gains of the prior two years.**

**Total shareholder returns (TSR), Index (Jan 1, 2020 = 100)**



<sup>1</sup>Top 5000 companies globally by market capitalization.

<sup>2</sup>Attacker payments players defined as businesses established less than 15 years ago and with a business and operating model characterized by "disruptive" characteristics either in terms of products (eg, e-commerce acquiring only, issuing of non-physical cards, payments-as-a-service), distribution channels (eg, partnerships with e-commerce/tech players), or technological infrastructure (eg, cloud-based data centers). Six companies included sample.

<sup>3</sup>Incumbent payments players defined as businesses established more than 15 years ago and with a business and operating model based on "traditional" payments products (eg, physical card issuing, in-store merchant acquiring, payments schemes), distribution channels (eg, direct distribution, partnerships with other financial services companies), or technological infrastructure (eg, on-premise data center based on legacy technology). Twenty companies included in sample.

Source: S&P Global, Corporate Performance Analytics by McKinsey

<sup>3</sup> Enterprise value divided by EBITDA.

<sup>4</sup> Excluding outliers. EBITDA multiples including outliers fell from about 111 times to about 41 times.

appetite, with a TSR decrease of 9 percent over the past 12 months and a relatively limited reduction in multiples, from 27 times EBITDA in August 2021 to 21 times in August 2022. This could be due to the more balanced business models and strong market positioning enjoyed by traditional leaders in the sectors, which better insulates these companies from macroeconomic disruptions and changes in interest rates and inflation. In contrast, incumbent payments technology providers (for example, processors, merchant acquirers) fared worst of the subgroups, with a TSR decrease in 2022 of 44 percent and EBITDA multiples decreasing from 32 times in August 2021 to 15 times in August 2022, in response to radically revised growth expectations (26 percent for 2019–21, versus 11 percent for 2021–23), notwithstanding their traditionally high margins.

This decrease in many payments companies' valuations could provide a catalyst for consolidation by incumbent payments companies and tech company entrants, given the lower multiples and reduced feasibility of IPOs as an exit strategy for private firms. Attackers might, in turn, shift their strategic approach, moving from "growth at all costs" to a fundamentals-focused and cost-conscious operating model with renewed focus on profitable customer and account growth, cash flow, and operating performance. These companies will likely revisit monetization opportunities—for example, partnerships with incumbent payments companies and companies in other sectors—while maximizing the efficiency of their existing operating models. When the going gets tough, adept unicorns can quickly pivot into workhorse roles.

### **Commerce expectations: From payments to commerce facilitation**

High valuations for payments attackers were based in part on the promise of converting the frequency of customer touchpoints and engagement into monetization across both consumer and commercial customer journeys. This would require tapping into payments-adjacent revenue pools such as marketing and personalization through payments data, commerce enablement optimizing the shopping journey beyond the payments experience, and software

and services surrounding the payment. Such initiatives have been under way for several years.

The reset in valuations reflects, in part, a recognition that not all payments specialists will succeed in expanding their market reach beyond payments. Business models, such as neobanks employing debit and prepaid card products to acquire customers, will increasingly resemble traditional financial institutions if they cannot succeed in building customer ecosystems. Business models like small-business merchant services have proven more successful at creating platforms combining software and services that enable commerce for merchants. Our 2022 survey of US merchants shows the average spending on value-added services ranges from \$11,306 for a small merchant to \$112,067 for a large merchant, with the most common services for small merchants by spend including insurance, marketing, and customer relationship management (CRM).

Players in the landscape that can monetize services and data are poised to capture an outsized share of revenue pools. Nonbanks and technology players with a large captive audience are increasingly using embedded finance to enhance their role in the commerce experience, increase their engagement with end users, and gather additional customer data. Providers using embedded finance may continue to have the competitive edge, given the relationship with the customer and their larger ecosystem of services beyond financial services and payments. Extending into payments revenue pools may ultimately be easier than extending outside payments revenue pools. Meanwhile, opportunities are created for traditional financial services providers to provide the infrastructure enabling embedded finance, albeit without the customer relationship.

### **Technology modernization: From incremental to structural**

Payments providers have always required regular investments in infrastructure and systems technology. However, the high relative cost of changing complex and entrenched systems that have proven resilient has led many participants to limit investing to a long period of incremental improvements.

This is changing. Payments infrastructures are now undergoing full redesigns, and banks are making fundamental adjustments to their core payment systems. According to McKinsey's 2021 Cloud Survey, the share of IT spending by banks on legacy infrastructure is expected to decrease from roughly 50 percent in 2021 to about 10 percent in 2024, thanks to private cloud and true multi-cloud solutions. This step change in infrastructure modernization is a result of increasing pressure to support the transition to instant, open, integrated, and cloud-based solutions to meet continuously rising customer experience expectations across the commerce journey.

Instant-payments volumes are increasing 40 to 60 percent globally and showing signs of reaching an inflection point on the S-curve. Instant-payments usage continues to nearly double annually in India, Spain, and Thailand, among other countries, and it is increasing by roughly 50 percent per year in Australia and Singapore. Even in China and the United Kingdom, where the technology has already achieved broad adoption, growth continues at double-digit rates.

Continued open-data requirements from regulations (Europe) and market pressures (US) are forcing financial services providers to enable API-based access to payments data. Digital natives expect the benefits and efficiency of an API-based integration, so financial services providers that want to participate must create an orchestration layer on top of legacy systems. Retailers moving to the cloud are demanding payments networks and acquirers to support this shift with commensurate infrastructure upgrades of their own. Further, innovative infrastructure providers (for example, Cross River Bank and ClearBank) are delivering new capabilities through de novo payments infrastructures, raising the competitive bar even higher.

These forces are accelerating the potential decoupling of payments from the large legacy providers as payments increasingly shifts to outsourcing and software-as-a-service (SaaS) models. Providers that make the technology investments to offer payments as a service could

benefit while legacy providers grapple with the changing economics of their frontline business.

Meanwhile central banks and national payments communities are likely to continue to consider modernizing their national payments infrastructures even beyond instant payments for a range of reasons, including financial inclusion, global trade and competitiveness, and currency considerations. The exploration of central bank digital currencies (CBDCs) will continue to progress, albeit at an evolutionary rather than revolutionary pace.

### **Social responsibility: Heightened expectations**

As noted in our Global Banking Annual Review of 2021,<sup>5</sup> that year saw increasing pressure from governments, investors, regulators, and consumers to address climate risk and sustainability issues. The impact of ESG will extend to nonbank payments providers as well.

Environment will greatly influence the area of trade, where support to polluting commodities or industries comes under scrutiny. Relatively emission-heavy payments products, such as cash and checks, may face revision in the quest for carbon-neutral systems. At the same time, consumers are looking to their merchants and payments providers to understand the environmental impact of their purchases.

Social responsibilities also affect payments, particularly given the role of payments in financial inclusion and data privacy. Digital payments and wallets in emerging markets have played a key role in bringing financial services to the underserved in cash-based economies. In developed markets, scrutiny of the role of payments in emerging verticals, such as gaming and cannabis, will likely continue in parallel with increasing consumer demand.

On governance, payments companies play a key role, given their obligation to contribute to the stability, security, compliance, and resilience of economic systems. Investments required to support this gatekeeper role for the transactional system—through KYC and anti-money laundering,

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<sup>5</sup> *The great divergence: McKinsey Global Banking Annual Review 2021*, December 2021.



for instance—impose growing costs and challenges. Though historically more of a factor for international payments, the ESG role increasingly weighs on domestic providers of payment services as well.

We believe that over the next five years, ESG concerns will be at the core of strategies for payments providers, banks, and other firms in financial services and that these companies need to be clear about their efforts to meet consumer and business expectations. We explore examples of this further in our chapter on sustainable global transaction banking.

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The payments industry is poised for significant growth over the coming five years; we expect an average annual revenue growth rate of 9 percent, exceeding the already-healthy prepandemic long-term trajectory of 6 to 7 percent. This growth will partly be in response to the changing interest rate environment, and partly to increasing dollar volumes resulting from inflation. In some regions, however, there is a greater chance that payments providers will face the headwinds of an economic contraction. Changes in the composition of revenue growth, along with other new sector dynamics, should prompt players across all regions and categories to revisit strategies and adjust courses of action.

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The rare confluence of dynamics presents an opportunity for competitors to reposition themselves on the payments chessboard for long-term advantage. For instance, players that can adapt their revenue and risk models and capabilities to macroeconomic factors like higher inflation and interest rates will emerge better positioned, protecting margins from higher operating costs while creating the right balance in revenue sources.

Incumbents may enjoy the balance sheet flexibility to make strategic acquisitions and significant technology modernization investments that position the company to capture future revenue pools. Conversely, attacker payments companies will need to adapt rapidly to new market realities. All players will need to reassess their business models and value propositions to capture opportunities emerging from payments regionalization, embedded finance, and the rising importance of sustainability.

The payments providers that adjust their operating models and platforms in a timely way to be both global and local will stand to benefit from the resulting scale and flexibility. They will also be well positioned to help customers navigate the growing complexity of the payments and commerce landscape, both cross-border and domestic. Those establishing early leadership in purpose, mission, and social impact will have the opportunity to win with consumers and mitigate reputational risk—and to monetize these value-added capabilities.

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Global Banking & Securities

# Embedded finance: Who will lead the next payments revolution?

Winners are already emerging in the race to provide banking and payments infrastructure for embedded finance, but incumbents and new entrants still have time to claim a share of this dynamic market.

*by Andy Dresner, Albion Murati, Brian Pike, and Jonathan Zell*



**Small businesses starting up today** may never interact with a conventional bank. By logging into their e-commerce or accounting platform, they can open a deposit account, order a debit card, and meet most of their financing needs. The operators of these platforms are not usually banks. Rather, they are software companies that partner with banks and technology providers to embed financial products into a single seamless, convenient, and easy-to-use customer experience. This new form of partnership between banks, technology providers, and distributors of financial products via nonfinancial platforms underpins what has been hailed as the embedded-finance revolution. Sitting at the intersection of commerce, banking, and business services, payments has been one of the first use cases of embedded finance, and a large number of the aspiring embedded-finance providers originate from the payments industry.

The value of this integrated experience for customers helps explain why embedded finance reached \$20 billion in revenues in the United States alone in 2021, according to McKinsey's market-sizing model.<sup>1</sup> According to our estimates, the market could double in size within the next three to five years. Despite the scale of this opportunity, many banks, payments providers, fintechs, investors, software firms, and potential distributors are unsure what embedded finance involves, how they can participate, and what it takes to win—questions we address in this article.

## What is embedded finance?

Put simply, embedded finance is the placing of a financial product in a nonfinancial customer experience, journey, or platform. In itself, that is nothing new. For decades, nonbanks have offered financial services via private-label credit cards at retail chains, supermarkets, and airlines. Other common forms of embedded finance include sales financing at appliance retailers and auto loans at dealerships. Arrangements like these operate as

a channel for the banks behind them to reach end customers.

What makes the next generation of embedded finance so powerful is the integration of financial products into digital interfaces that users interact with daily. Possibilities are varied: customer loyalty apps, digital wallets, accounting software, and shopping-cart platforms, among others. For consumers and businesses using these interfaces, acquiring financial services becomes a natural extension of a nonfinancial experience such as shopping online, scheduling employees to work shifts, or managing inventory. This more deeply embedded form of embedded finance is what has grown so significantly in the US in recent years.

The evolution of embedded finance has been enabled by fundamental changes in commerce, merchant and consumer behavior, and technology. The digitization of commerce and business management has massively expanded opportunities to embed finance in nonfinancial customer experiences. As much as 33 percent of global card spending—50 percent in the US—now takes place online, with a large portion of small and midsize companies in the US relying on software solutions for managing their business.<sup>3</sup> In addition, as digital natives came of age, they expanded the pool of consumers and businesses open to receiving all their financial services via digital platforms. Finally, open-banking innovation, supported by mandates in the European Union and market-led adoption in the US, has helped unlock latent demand by enabling third-party fintech players to access consumers' banking data and even conduct transactions on their behalf.

## Who distributes embedded finance, and what products do they offer?

Embedded finance is likely to emerge in any environment in which a critical mass of end customers (consumers or businesses) have frequent

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<sup>1</sup>The model is based on McKinsey's Global Banking Revenue Pools, 2022; McKinsey's Global Payments Map, 2022; consumer and merchant research surveys; and data from the reports of embedded-finance firms.

<sup>2</sup> McKinsey Global Payments Map, 2022.

<sup>3</sup> McKinsey Merchant Acquiring Survey, 2022.

(often daily) digital interactions with the operator of the digital platform, which we refer to as the “distributor” of embedded finance. For a nonbank company acting as a distributor, embedded finance offers a way to enhance the customer experience and create a new source of revenue without incurring the overhead associated with operating a bank. The types of businesses well placed to offer embedded finance include retailers, business-software firms, online marketplaces, platforms, telecom companies, and original equipment manufacturers (OEMs). All these categories have seen high levels of activity and innovation in embedded finance during the past year or two.

Among embedded-finance distributors and their end customers, demand is already maturing for a range of deposit, payment, issuing, and lending products (Exhibit 1). In addition to these traditional

financial products, novel use cases are emerging. For example, embedded-finance distributors are offering prepaid cards to employees as part of earned-wage access programs; giving merchants the option to use their deposit accounts for instant-payments settlement. Some are providing just-in-time funded debit cards for gig economy workers to use when making purchases for members of delivery-service platforms.

The embedded-finance product portfolio is likely to expand further as customer-onboarding and product-servicing processes are gradually digitized and real-time risk analytics and services grow more sophisticated. Risk is likely to remain a constraint on growth, however, as products that require case-by-case assessment, in-person touchpoints, or regulatory waiting periods, such as commercial real estate financing, are less susceptible to end-to-end

Exhibit 1

## Demand for embedded finance is already growing in deposits, payments, issuing, and lending.

### Embedded-finance distributors

<b>Traditional retailers</b>	Offer attractive financial products to enrich the customer checkout experience and incentivize brand loyalty and spending
<b>Software firms</b>	Strengthen the platform value proposition to drive merchant adoption, retention, and revenues
<b>Marketplaces and platforms</b>	Offer tailored financial products to improve the customer experience and increase merchant adoption, retention, and revenues
<b>Telecom companies</b>	Increase customer engagement and enhance the value of smartphone software and hardware with money-movement capabilities
<b>OEMs</b>	Simplify ownership and financing through subscription and other financing services

### Embedded-finance products

<b>Deposits</b>	<b>Transaction and deposit accounts</b> that merchants and consumers can open and use from within an app or software platform
<b>Payments</b>	<b>Money movement</b> from within nonbank apps or software
<b>Issuing</b>	<b>Prepaid, debit, and credit cards</b> for customers and employees, issued from within business management software or apps
<b>Lending</b>	<b>Unsecured lending</b> embedded in business management software (eg, merchant cash advance)  <b>Secured lending</b> for large purchases with underwriting and origination at point of sale

Source: McKinsey analysis

digitization. Despite these constraints, we estimate that products suitable for offering via embedded finance could account for as much as 50 percent of banking revenue pools.<sup>4</sup>

## Who are the enablers of embedded finance?

The distributors of embedded finance rely on two sets of providers to manufacture the embedded-finance offering and grant access to it (Exhibit 2):

- *Technology providers* (fintechs) provide the platform through which distributors can access, customize, and offer embedded-finance products. Some, including Marqeta, provide point solutions for specific categories of financial products, such as card issuing. Others, including Unit, Bond, and Alviere, operate platforms that offer distributors multiple financial products, such as deposits, money movement, and lending.
- *Balance sheet providers* (licensed or chartered financial institutions) are responsible for manufacturing embedded-finance products, providing risk and compliance services, and offering access to funds for lending and deposit

products. Balance sheet providers sometimes partner directly with technology providers to create an integrated embedded-finance offering for distributors. For instance, Stripe is partnering with Goldman Sachs and other banks to offer embedded finance to platforms and third-party marketplaces.

A few banks and fintechs, including Cross River Bank and Banking Circle, fulfill both of these functions. Having built their own technology layer on top of their own balance sheet, they provide embedded finance to distributors such as retailers, business-software providers, marketplaces, and OEMs by themselves, with no need for additional partnerships.

## Who is capturing the value?

Not all players benefit equally from the rise of embedded finance. As in banking in general, revenue primarily accrues to risk takers and to the distributors that own the customer relationship. For example, according to McKinsey research, the majority of revenues from embedded-finance lending products (55 percent of \$14 billion in the United States in 2021) accrued to the balance sheet provider—the firm bearing the risk of credit

Exhibit 2

**To embed financial products into their customer journeys, distributors work with technology and balance sheet providers.**

	<b>Distributor</b>	<b>Technology provider</b>	<b>Balance sheet provider</b>
<b>Role in embedded finance</b>	Works with technology and balance sheet providers to embed financial products in its customer, employee, and partner journeys	Maintains and configures technology for delivering financial products to distributors via APIs	Provides distributors with access to regulated license, risk framework, funds, and a place to hold deposits
<b>Types of firms involved</b>	Traditional retailers, software firms, marketplaces and platforms, telecom companies, OEMs	Fintechs and banks	Banks

Source: McKinsey analysis

<sup>4</sup> Calculated as revenue pools of lower-risk, highly automatable products that have proven demand and can realistically be embedded, based on McKinsey's Global Banking Revenue Pools, 2022.

default. However, where payments and deposit products were concerned, the distributors who owned the end-customer relationship benefited most. In lending, for instance, they earned \$4 billion of the remaining \$6 billion revenue pool, equal to 30 percent of total revenues.

These revenue dynamics explain two market trends we have observed. First, many embedded-finance distributors began by offering deposit and payment products before extending their product range to lending products such as credit cards and merchant financing. Deposit and payment products are attractive to distributors not only because they represent substantial revenue pools and promote stickiness, but also because they are a powerful tool for building customer relationships and capturing customer data that can be used to inform underwriting decisions for future higher-margin lending products.

Second, many technology providers are seeking to capture a larger share of embedded-finance revenues by expanding across the value chain. In lending, for instance, they are looking to increase their share of revenues by finding ways to share in the risk, such as offering repurchase agreements for loans originated by balance sheet providers.

## What does it take to win in embedded finance?

For embedded-finance providers, success demands clear differentiation in the form of product breadth or depth, or the provision of ancillary program management services.

### Options for differentiation

We see three main sources of differentiation for embedded-finance distributors, balance sheet providers, and technology providers:

1. *Product breadth.* Many distributors are adopting a “land and expand” approach to embedded finance. They start by offering payment acceptance or deposits and then extend their product portfolio to lending products or more

complex offerings to address customers’ broader financial needs. Some distributors prefer to shape their strategy around a one-stop shop developed with a single trusted technology partner that offers a wide array of products, while others opt to work with several technology providers to avoid overreliance on one partner.

2. *Product depth.* A few technology and balance sheet providers are building deep expertise in specific embedded-finance categories such as issuing, in order to claim outside market share in these niches. They develop innovative use cases—such as just-in-time fund deposits into cards or crypto-linked payment authorization—as a basis for creating novel financial products for end customers. Over time, however, the demand for integrated financial solutions and the synergies that can be captured across product categories are likely to prompt these providers to protect their flanks with product breadth as well.
3. *Program management support.* Many distributors that are new to embedded finance are understandably concerned about how to build, sell, and service a financial product for end customers. Some of them may see the regulatory and reputational risk attached to financial products, especially lending, as an insurmountable hurdle. To help them overcome the risk, many embedded-finance technology providers are offering sales, servicing, and risk management expertise or are orchestrating other partners providing them. The ability to provide distributors with this kind of program management is likely to be a key source of differentiation in the long run.

## Key decisions for embedded-finance market entrants

Although leaders are already emerging, the embedded-finance market still has ample white space for new entrants; we expect it to double in size over the next three to five years. The long-term winners are likely to be those that are already

building the table stakes technology, expertise, and relationships needed for a future leadership position. Financial services firms and fintechs looking to stake their claims in the embedded-finance business would be well advised to commit themselves to implementing four initiatives: choosing a strategy, establishing a developer experience, building capabilities to support distributors, and developing support and risk services.

*Choose where to compete.* For most banks with proprietary distribution, embedded finance represents a significant cannibalization risk. However, banks with limited footprints or localized relationships, such as community banks and regional banks, may see it as an attractive way to expand their revenue base. Some may be comfortable with growing deposits and earning revenues relatively passively, at least early on, but many will look for opportunities to differentiate themselves and boost revenues through more advanced products and support. At the moment, payments-focused technology providers are leading the charge on embedded finance, using their money movement capabilities to attract distributors and then expanding into products that have been the strongholds of banks, such as lending.

*Build and enable a modern developer experience.* Many banks and legacy financial services infrastructure firms are not yet equipped to externalize their processes and workflows to allow distributors to seamlessly integrate embedded-finance products into their journeys or distribution platforms. Distributors wanting to scale up quickly will need to build a modern developer experience,

including the necessary technology to enable it. To do this, they should provide third-party developers with self-service access and well-documented APIs.

*Adapt to B2B2C and B2B2B sales motions.*

Although some financial institutions operate with channel partners, many are accustomed to serving end customers directly. Those using direct channels will need to build a new set of capabilities to support distributors in selling embedded-finance products to their consumer or business customers.

*Develop support and risk services.* Retailers, manufacturers, telecoms, and other distributors of embedded finance may not have the capabilities to build, sell, and service financial products in a risk-controlled, regulatory-compliant, effective manner, nor will they have the time or appetite to build such capabilities. They will look to balance sheet and technology providers for advice on how best to deploy embedded finance and orchestrate the expertise and tools needed to deliver it in a compliant way. As well as providing advice, the balance sheet and technology providers will need to build a risk management framework that gives them confidence that the distributors they work with are acting within their risk appetite and in a compliant manner.

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Winners are already emerging among the financial institutions that manufacture embedded finance. However, tech-savvy banks, fintechs, and payments companies that are willing to invest and partner still have time to claim their share of this fast-growing market.

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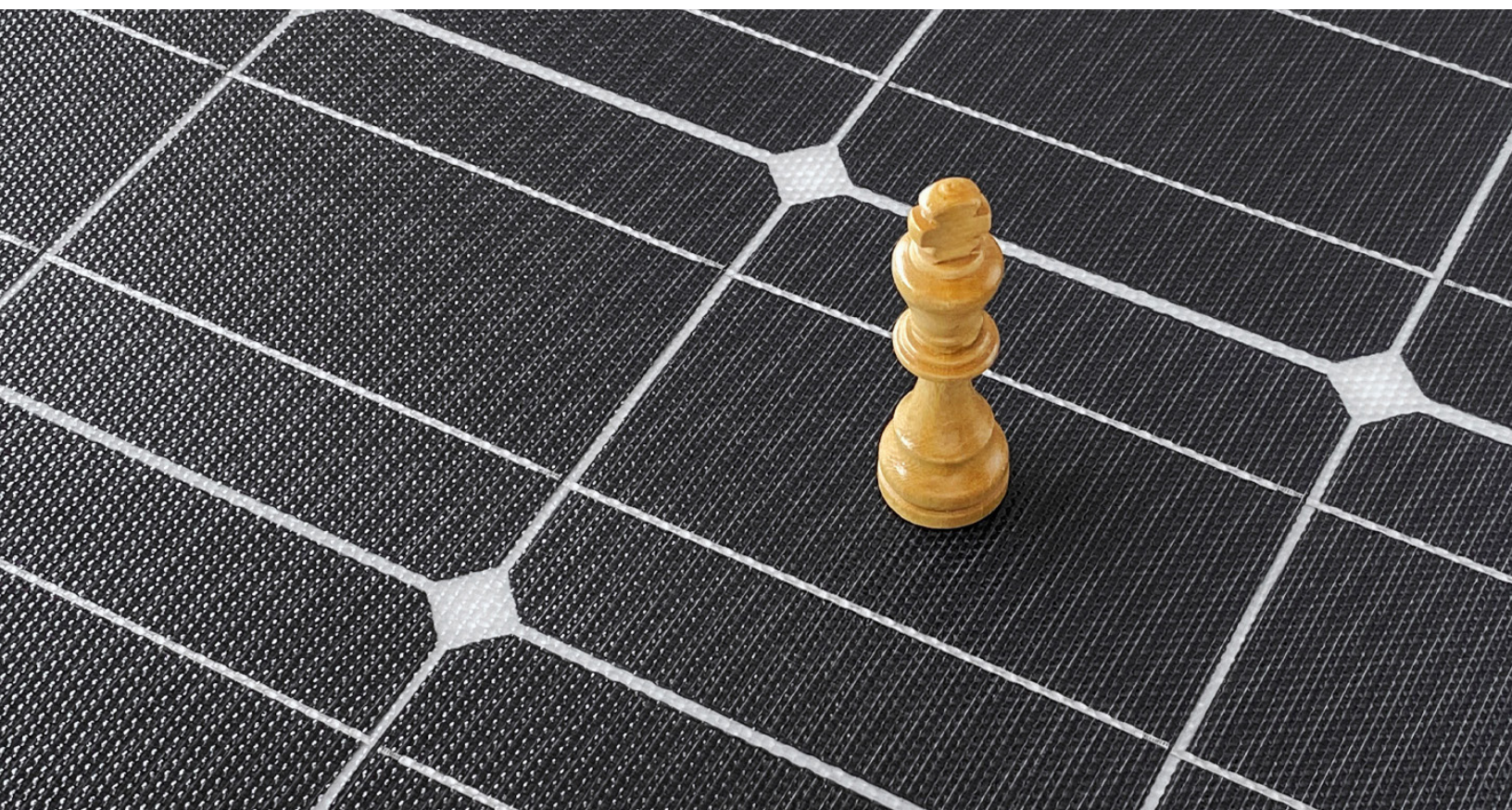
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Global Banking & Securities

# Sustainability in global transaction banking: A market imperative

Sustainable financial products can propel revenue growth for banks and contribute substantially to businesses' progress in meeting global climate goals. But success requires a strategic approach.

*This article is a collaborative effort by Alessio Botta, Nunzio Digiacomo, Joseba Eceiza, Helmut Heidegger, Reema Jain, Francesco Mach di Palmstein, and Markus Röhrig, representing views from McKinsey's Banking Practice.*



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**Sustainability<sup>1</sup> has become** a topic of crucial importance for many corporations, including financial institutions. One reflection of this is the strong growth in sustainable debt instruments, which according to BloombergNEF surpassed \$1.6 trillion in 2021.<sup>2</sup> In contrast, sustainable global transaction banking (GTB) is still in the early stages, but its potential for growth is significant. We estimate that revenue from sustainable trade finance and cash management products will grow by 15 to 20 percent annually to total combined revenues of \$28 billion to \$35 billion in 2025,<sup>3</sup> with market penetration reaching approximately 25 percent in trade finance products and 5 percent in cash management products.

Research also indicates that demand for sustainable GTB products far exceeds supply (at present, only 10 percent of demand is met<sup>4</sup>), and we expect that in the coming years, sustainability will become a vital element of a competitive GTB offering. Surprisingly, few banks today embed sustainability in their GTB products, handing market leaders an opening to capture a disproportionate share of the market. Banks should act now to build a sustainable GTB value proposition that enables them to defend existing relationships and expand their market share while staying ahead of customer demands and the expectations of employees, investors, and the public.

## **Sustainability in GTB: Opportunity and imperative**

Banks' current sustainability offerings are typically incorporated in traditional lending products, and growth in these products has been remarkably strong. According to Bloomberg estimates, the combined volumes of sustainability-rated debt instruments have grown approximately 80 percent per year, increasing from approximately \$155 billion in 2017 to more than \$1.6 trillion in 2021.<sup>5</sup>

By contrast, most banks across the world have taken only preliminary steps toward incorporating sustainability features within GTB products. This slow uptake derives in part from complexity—which arises from paper-intensive processes involving multiple parties—and from the lack of reliable data on companies' sustainability-related activities and of industry standards for evaluating these activities.

Despite these challenges, embedding sustainability-tracking capabilities within core transaction banking services can be highly effective in improving companies' performance on ESG metrics, as trade and payment transactions are systematic and recur frequently. What is more, trade finance rolls over frequently (every 30 to 90 days), which means that products such as supply chain finance (SCF), letters of credit, and guarantees have the potential to contribute disproportionately to new volumes in sustainable finance.

The trade finance community—including financial institutions, export credit agencies, trade organizations, technology and service providers, and corporations—is focusing on various sustainability initiatives.<sup>6</sup> Diverse banks offer sustainability-linked solutions, including deposit accounts backed by investments in sustainability-rated assets and letters of credit issued for transactions in which the underlying asset (for example, batteries for electric vehicles) contributes to efforts to mitigate climate change. In addition, the number of requests for proposal (RFPs) for trade finance projects involving sustainability criteria is increasing, especially in the United States and Europe.<sup>7</sup>

The main reason for strong corporate demand for sustainable GTB products is that banks have unique access to transaction data (through various products like cash pooling and supply chain finance), which can be used to help companies manage the carbon impact of their operations and achieve their target contributions to industry

<sup>1</sup> Sustainability is a broad term covering the impacts of environmental, social, and governance (ESG) guidelines. Specifically, ESG guidelines encompass the degree of responsibility that companies assume, irrespective of what they are legally required to do, for sustainable development in these three areas. See Jordan Bar Am, Nina Engels, Sebastian Gatzert, Jacqueline Lang, and Frank Sanger, "How to prepare for a sustainable future along the value chain," McKinsey, January 2022, McKinsey.com.

<sup>2</sup> "Sustainable debt issuance breezed past \$1.6 trillion in 2021," BloombergNEF, January 12, 2022, bnef.com.

<sup>3</sup> Estimates subject to change according to future macroeconomic conditions.

<sup>4</sup> *World supply chain finance report 2020*, BCR, bcrpub.com.

<sup>5</sup> Gregory Elders et al., "Blossoming green-bond market growing toward \$250 billion year," Bloomberg Intelligence, March 8, 2018, bloomberg.com;

<sup>6</sup> "Sustainable debt issuance," January 12, 2022.

<sup>7</sup> *Sustainability in export finance*, ICC Global Export Finance Committee Sustainability Working Group, September 2021, iccwbo.org.

<sup>8</sup> Lucy Fitzgeorge-Parker, "Transitioning trade finance is ESG's biggest challenge," Euromoney, January 25, 2021, euromoney.com.

sustainability goals, such as the UN Sustainable Development Goals (SDGs) for 2030. Banks can be particularly effective in assessing scope 3 greenhouse gas (GHG) emissions, which typically account for most emissions linked to a company's supply chain and are the most difficult to measure (see sidebar, "How to define sustainability for GTB products"). Stronger monitoring enables a company to reduce emissions along its supply chain, which enables it to meet the expectations of shareholders and stakeholders.

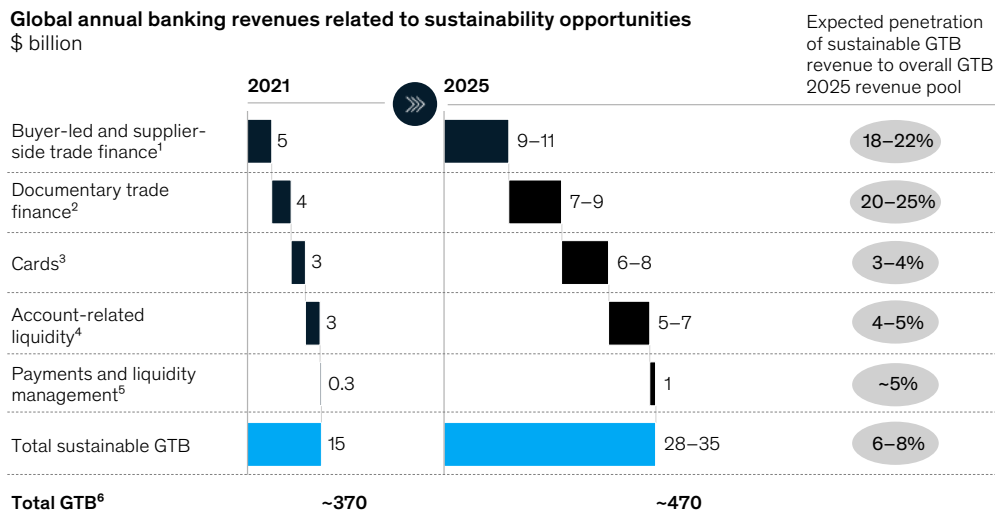
Not only do companies that adopt sustainability-rated GTB offerings gain a stronger reputation in the eyes of investors and the public through a genuine and demonstrable commitment to better outcomes for the environment and society, they also typically gain access to favorable conditions from their own buyers, including dynamic discounting and wider access to credit from banks. At the next level, participation in an ecosystem supporting the shift toward sustainability enhances a corporate client's access to suppliers with better sustainability performance on measurable outcomes. Further, stronger involvement of mid-corporates (which typically face significant challenges in complying with sustainability standards) helps to elevate the

standards of the supplier base. Finally, improving performance on sustainability goals is part of a virtuous cycle: research shows that the financial performance of companies corresponds to how well they contend with ESG and other nonfinancial matters.<sup>8</sup>

Given the strong and growing demand among corporates for sustainable financial services, McKinsey estimates that in 2025, sustainable GTB global revenue pools will reach \$16 billion to \$20 billion in trade finance and \$12 billion to \$15 billion in cash management, both growing at an annual rate of approximately 15 to 20 percent. This opportunity entails primarily a shift from traditional GTB products to GTB products and services incorporating measurable sustainability objectives. Secondarily, it involves incremental revenues flowing from the anticipated acceleration of overall GTB revenue growth. Our projection of \$28 billion to \$35 billion in sustainable GTB revenue in 2025 represents 8 percent of global transaction banking revenue from core products, including trade finance (buyer-led, supplier-side, and documentary) and cash management, including commercial cards, acquiring, POS, deposits, liquidity management, payments, and collections (Exhibit 1).

Exhibit 1

## The revenue opportunity in sustainable global transaction banking (GTB) is estimated to grow to \$28 billion–\$35 billion by 2025.



<sup>1</sup>These figures are not included in GPR report; includes reverse factoring, invoice discounting, factoring, etc.

<sup>2</sup>These figures are carved out from cross-border in GPR report.

<sup>3</sup>Includes commercial credit card and other products.

<sup>4</sup>Fee component of current accounts, term deposits, and overdrafts.

<sup>5</sup>Including cross-border and domestic transactions; also includes collections.

<sup>6</sup>Includes revenues relevant for ESG products in GTB; excludes net interest income component for deposits.

Source: Bank websites; expert interviews; McKinsey Payments Map

<sup>8</sup> Sara Bernow, Jonathan Godsall, Bryce Klempner, and Charlotte Merten, "More than values: The value-based sustainability reporting that investors want," McKinsey, August 2019, McKinsey.com.

As evidence mounts that companies' adoption of policies and practices to address sustainability is linked to stronger financial performance,<sup>9</sup> GTB service providers stand in a unique position to support clients working toward combined sustainability and economic goals. And just as consideration of impacts on sustainability has become standard practice for a growing set of asset managers and institutional investors, we anticipate that sustainable GTB will become a market imperative and that the integration of sustainability-related features within core transaction banking services will become a vital element of a competitive offering.

that banks aiming to lead in this space should broaden their value proposition in three waves. First, they should enhance the basic products of trade finance and cash management with basic sustainability features. The next wave would involve building a more elaborate supply chain ecosystem with a robust sustainability rating methodology and advanced analytics to assess sustainability across the supply chain. Finally, depending on client needs and expectations in the markets served, banks could build advisory services to help corporate buyers and their suppliers improve their performance on sustainability goals.

### **A best-in-class sustainable GTB ecosystem**

Based on our analysis of banks' current offerings in sustainable transaction banking, we believe

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<sup>9</sup> Witold Henisz, Tim Koller, and Robin Nuttall, "Five ways that ESG creates value," McKinsey, November 14, 2019, McKinsey.com.

## **How to define sustainability for GTB products**

Sustainable GTB products are cash management and trade finance products that support companies in their sustainability activities, which aim ultimately to contribute to the UN Sustainable Development Goals (SDGs).

In the broadest sense, sustainability principles and practices enable organizations to assess their impacts on environmental, social, and governance matters while also considering their financial returns. More specifically, the 17 UN SDGs comprise 169 targets and 231 indicators. Realizing the SDGs by 2030 will require an estimated \$5 trillion to \$7 trillion a year of new investment.<sup>1</sup> GTB, as the business responsible for moving these flows, has a critical role to play in achieving these goals.

Organizations' internal sustainability frameworks and the UN SDGs complement each other by supporting businesses, governments, and civil society in their efforts to operate in ways that are genuinely sustainable in the impacts they have on the environment, society, and people. There are also important differences between these two components of sustainability governance. On the one hand, the sustainability frameworks of businesses focus on processes and are designed to report at a micro (firm) level, but they lack globally agreed-upon definitions and standards. On the other hand, the SDGs comprise both a specific set of time-bound goals and a globally accepted framework for reporting at a macro level (globally, regionally, or domestically).

At the intersection of companies' sustainability frameworks and the UN SDGs stands the Greenhouse Gas Protocol (GHGP), which addresses the environmental component of sustainability, including UN SDG 13, which targets climate action. The GHGP, formed through a partnership between the World Resources Institute and the World Business Council for Sustainable Development, encompasses three scopes: the direct emissions from sources the company owns or controls (scope 1), indirect emissions from the

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<sup>1</sup> *Sustainability in export finance*, ICC Global Export Finance Committee Sustainability Working Group, September 2021, iccwbo.org.

generation of purchased energy (scope 2), and all other indirect emissions occurring as a consequence of the company's activities but produced from sources not owned or controlled by the company (scope 3).<sup>2</sup> GTB can contribute to improved performance in all three scopes, but it is in scope 3 where it has the potential to bring the greatest impact, particularly as it addresses 15 different upstream and downstream emissions, which can be monitored with the help of transaction data collected from across the supply chain.

Each link in the supply chain, from the underlying asset or good to transportation and the final use of funds or goods, affects the sustainability rating of a trade finance or cash management product (exhibit). For both product lines, the underlying asset—say, a wind farm, solar panels, electric vehicles, goods made from recycled materials, or an agricultural good produced with sustainable farming methods—is typically the main source of impact on external parties and, consequently, the most important factor in defining the value of the product as contributing to a company's sustainability.

Note that while the GHGP categorizes greenhouse gas emissions associated with a company's corporate carbon footprint (CCF) into scopes 1, 2, and 3, this categorization does not apply to the product carbon footprint (PCF). The PCF describes the total amount of greenhouse gas emissions generated by a product or a service over the different stages of its life cycle and is calculated according to various standards, such as ISO 14067 and PAS 2050. A sustainable GTB offering should take into consideration both corporate and product impacts.

Exhibit

## Sustainable trade finance and cash management products are defined by the underlying goods and the sustainability ratings of buyers and suppliers.

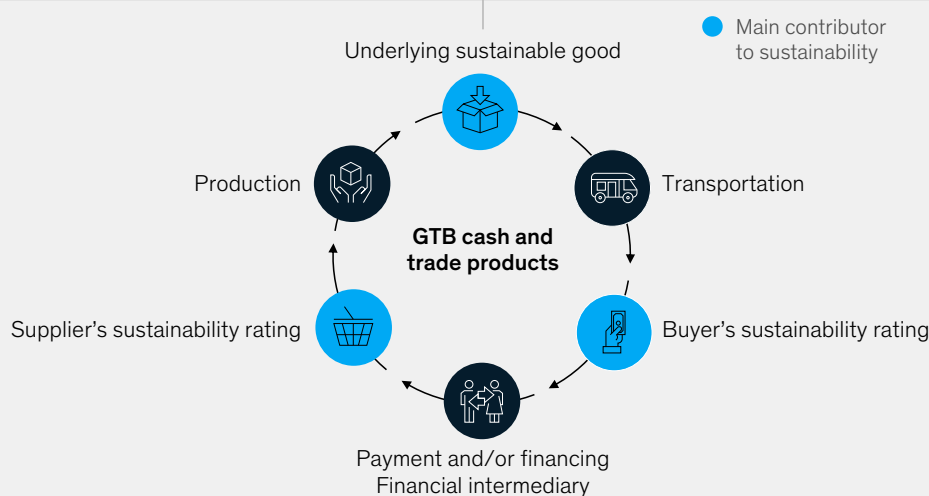
### How GTB cash and trade products support companies

#### Sustainability impact on ESG metrics

- **Environmental** (eg, carbon footprint per GHGP,<sup>1</sup> water quality)
- **Social** (eg, community relations, customer satisfaction)
- **Governance** (eg, internal controls, regulatory policies)

#### Contribution to UN Sustainable Development Goals

- 17 goals
- 169 targets
- 231 indicators



<sup>1</sup>Measured according to Greenhouse Gas Protocol accounting standards.  
Source: McKinsey analysis

<sup>2</sup> Examples of scope 3 emissions include those resulting from "extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services." See *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard*, revised edition, World Business Council for Sustainable Development / World Resources Institute, March 2004.

### Basic sustainable products

The basic products of trade finance and cash management should incorporate sustainability features such as a basic rating methodology for qualified transactions:

- *Documentary trade finance.* For sustainable buyers or sustainability-linked transactions, banks could offer documentary trade finance, including letters of credit or guarantees, at better pricing and improved access. As an illustration, a letter of credit for the delivery of solar panels would qualify as a sustainable transaction, offered at a preferred rate to the buyer—and transferable as a sustainable trade asset.
- *Cards.* On commercial cards, banks could offer favorable terms for purchase of sustainable goods or a mechanism to compensate for high-emission expenses such as travel. In addition, this category could include other products such as acquiring and point-of-sale (POS) products with features such as rounding up each transaction to divert the surplus to sustainability projects or lowering POS or e-commerce fees for purchases of sustainable goods or purchases from merchants with higher sustainability scores.
- *Account-related liquidity.* Banks could invest deposits in sustainable assets.
- *Payments and liquidity management.* In payments, banks could offer favorable terms on transactions for sustainable underlying assets and with counterparties scoring high on sustainability. In the area of liquidity management, banks could enable virtual accounts, which can be segregated from the account structure, to separate balances and transactions related exclusively to sustainable activities. Within collections, banks could offer favorable terms on digital collections and sell CO<sub>2</sub> emissions credits to offset the environmental impact of cash and check transactions.

Some banks are already offering sustainable products. Examples from one bank include green guarantees and standby letters of credit, which guarantee an underlying project with

a clear contribution to the environment. This solution focuses on five main sectors: renewable energy, clean transportation, waste management, sustainable water, and hydrogen. Another bank offers a sustainable deposit, which is dedicated to financing sustainable assets located in developing countries and is aligned with the UN SDGs. This offering—priced in US dollars, British pounds, and euros—is broader in scope than “green deposits,” available for several years, which focus on financing renewable-energy projects.

### Supply chain ecosystems

A fully fledged sustainable supply chain ecosystem should enable suppliers and buyers to interact seamlessly, provide a robust sustainability rating methodology, and offer preferable rates to organizations that meet sustainability thresholds. The key strategic distinction of this wave is the use of advanced analytics to assess and manage ESG risk across the entire base of suppliers and buyers. For example, banks can help corporates assess the amount and types of GHG emissions that each supplier adds to total supply chain emissions and set policies for minimum standards and bidder exclusion criteria. The ratings capability (typically provided by a third party focused on sustainability assessment) is integrated within a technology platform that is usually supported by a trade fintech company.

Products in this wave include buyer-led and supplier-side trade finance:

- *Buyer-led trade finance.* With buyer-led trade finance, such as reverse factoring, the bank could pay sustainable clients’ suppliers before maturity at a more favorable financing rate than in traditional reverse factoring. Or the bank could offer dynamic discounting, in which the buyer pays suppliers before maturity in exchange for a discount on the payable amount, with the discount rate decreasing as the supplier or underlying asset becomes more sustainable.
- *Supplier-side trade finance.* Approaches to supplier-side trade finance could include invoice factoring where the invoice is discounted at a favorable rate for the supplier according to underlying sustainable assets or the involved companies’ ratings.

For example, a global bank has developed a sustainable SCF platform, one of the main partners of which is a third-party sustainability ratings agency, affording participants greater transparency and objectivity than typically available with internal key performance indicators (KPIs). The platform also provides quantifiable, external evidence of participants' ESG status in various areas, including the environment, human rights, labor, and sustainable procurement. The digital platform, developed in partnership with a fintech organization, includes market-tested capabilities for capturing, accessing, and onboarding suppliers. Fast integration of new suppliers reinforces supply chain resilience, which—along with enhanced visibility and communication on invoices—increases the value of the platform to all participants.

Another example is the launch of a sustainability-linked reverse-factoring or SCF program in Asia-Pacific to help corporate clients and their suppliers achieve their sustainability objectives and improve supply chain resilience, as well as manage working capital needs. The program includes criteria for periodic evaluation of suppliers' performance in meeting ESG standards. ESG scorings are conducted by the corporate buyer's independent assessor. Qualifying suppliers can access supply chain financing at preferential rates tied to their sustainability score.

#### **Advisory and certification services**

Advisory and certification services can support companies in their ongoing efforts to reduce GHG emissions along their value chain. These value-enhancing services, which are adjacent to sustainable GTB products and platforms, extend beyond the traditional core competency of transaction banking. By consulting on various marketwide standards and assisting clients in achieving ESG certifications and improving their ratings, banks can reinforce the trusted advisory role that any GTB institution claims to pursue and can gain a distinct competitive advantage. Banks may also consider providing an ecosystem of nonfinancial sustainable offerings, including mobility- and energy-related products.

Significantly, banks have the potential to provide comprehensive and holistic advisory on sustainability performance metrics by leveraging their extensive data sets. As an example, a bank might advise a corporate on reducing emissions along its supply chain or provide support in establishing baseline emissions of the company's suppliers or projects. It might also consult on using aids for sustainability that are available to the public at no charge, such as sustainable metrics in procurement selection, and on benchmarking with other banks or companies to raise targets and improve monitoring. In addition, banks can work with suppliers to reduce emissions linked to materials and processes. Further, they might prioritize personal engagement with small and medium-size enterprises (SMEs) to expand the reach of their advisory business, as smaller firms are typically underserved by rating agencies, which, due to their limited sales networks, tend to focus on large firms.

Banks can also support certification on emissions by standardizing the process for obtaining broadly recognized assessments of each supply chain participant's performance on environmental sustainability measures. This service would include the identification of environmental-sustainability KPIs, customized by industry and subsector, and the selection of thresholds for varying levels of compliance with GHG emissions standards. Leveraging their unique access to data along the value chain, banks can establish automated tracking systems to evaluate suppliers' performance on select KPIs.

Based on our examination of 12 banks, we have observed that sustainable GTB offerings vary according to bank size and markets served. For instance, global banks offer the broadest range of sustainability-linked trade finance and cash management products, including advanced digital platforms through which corporates and qualified suppliers may access SCF at preferential rates (Exhibit 2). However, few of these platforms operate at scale. The sustainability offering of banks operating in two or more global regions (multiregional banks) is typically limited to the

Exhibit 2

**Sustainable GTB value propositions typically differ by bank segment.**

Currently not offered or limited
  Currently offered
  ADP<sup>1</sup>
 Partnership with SRA<sup>2</sup>

		Global banks			Multiregional banks					Domestic banks			
		A	B	C	D	E	F	G	H	I	J	K	L
<b>Basic sustainable trade and cash products</b>	Documentary trade finance	■	■	□	■	■	■	■	■	■	□	□	□
	Cards <sup>3</sup>	■	■	□	■	□	■	□	□	■	□	□	□
	Account-related liquidity	□	■	■	□	□	■	■	■	■	□	□	□
	Payments and liquidity management <sup>4</sup>	□	□	□	□	□	□	□	□	□	□	□	□
<b>Sustainable supply chain ecosystem</b>	Buyer-led trade finance	●	●	□	●	●	□	●	□	●	□	□	□
	Supplier-side trade finance	□	□	□	■	□	■	□	■	■	■	□	□
<b>Sustainable GTB advisory and certification services</b>		□	□	□	□	□	□	□	□	□	□	□	□

Note: Not exhaustive.  
<sup>1</sup>Advanced digital platform.  
<sup>2</sup>Sustainability rating agency.  
<sup>3</sup>Includes commercial credit card and other products.  
<sup>4</sup>Including cross-border and domestic transactions.  
 Source: McKinsey analysis

incorporation of basic sustainability features into trade finance products, with the majority also partnering with independent rating agencies to score suppliers on the extent of their sustainable practices. Few multiregional banks offer an advanced digital platform. Domestic banks generally focus their sustainability program on lending and currently do not offer GTB products with sustainability features.

Across banking segments, sustainable advisory and certification services are limited or nonexistent. Advanced digital platforms provide an excellent environment for scaling these adjacent services, which have the potential to contribute significantly to GTB revenue. At

present, however, sustainability advisory represents white space to be explored.

**Constraints to scale**

With so many untapped opportunities, what is holding back banks? We see three types of constraints limiting their ability to scale sustainable GTB products:

1. lack of standards on several levels
2. limited capital available for ecosystem development and operation
3. an economically challenging business model

### **Lack of standards on several levels**

As discussed in a McKinsey report prepared last year in collaboration with the International Chamber of Commerce (ICC) and Fung Business Intelligence,<sup>10</sup> diverse standards vital to creating an efficient, transparent, and wholly interoperable global system of trade finance are in varying stages of conceptualization, development, and implementation. Gaps in the development and application of standards pose challenges on several levels, from trade documentation to product definitions, data models, application programming interfaces (APIs), and shared utilities:

- *Standards for sustainable digital trade documents.* While numerous efforts have attempted to make electronic documents legally acceptable and some countries have adopted the Model Law on Electronic Transferable Records (MLETR), more effort is required to increase adoption by making the law more broadly acceptable and introducing electronic transferable records for sustainable trade.
- *Standard definitions of sustainable trade finance products.* There are disparate efforts to establish a widely accepted trade finance product taxonomy, such as that published by the Global Supply Chain Finance Forum.<sup>11</sup> However, the global trade finance community still lacks common definitions of “supply chain sustainability” (broadly) and “sustainable trade finance products” (more narrowly).
- *Standards for uniform sustainable trade finance data models.* Sharing information among participants is at the center of a sustainable ecosystem. A data model might, for example, govern how a specific sustainable product or company sustainability rating should be presented and which technical format should be used.
- *Standards for sustainable trade finance APIs.* Standard APIs would enable participants to connect and exchange data seamlessly with multiple networks and service providers.

Adoption of standards governing the design of APIs for trade finance systems has been limited, however, and the proliferation of proprietary models increases the fragmentation of the global trade finance ecosystem. Banks continue to publish proprietary B2B APIs, just as fintechs design data models for interaction with their own platforms.

- *Standards for shared utilities.* As an example of industry efforts to establish standards for shared utilities, SWIFT announced last year that its KYC Registry would be the first global utility to integrate the ICC’s Sustainable Trade Finance Guidelines for customer due diligence, which cover key areas such as sustainability commitments, capacity and track record, supply chain practices, and commodities.<sup>12</sup>

### **Limited capital for ecosystem development and operation**

The capital available for investment is limited, which for banks and corporates alike poses a significant challenge to the implementation of a sustainable GTB offering. Further, a substantial investment is required to build the data platforms critical for the advanced sustainability products and services of the second and third waves (that is, a GTB digital ecosystem and advisory and certification services). As fintech valuations have dropped significantly this year, technology providers are facing new constraints in accessing capital, which may hamper development of more robust platforms.

Additional investments are needed to establish and run partnerships with the various parties involved in the trade finance ecosystem—for example, fintech companies, ratings agencies, shipping and logistics companies, banks, and technology companies. These arrangements can carry hidden costs that are often overlooked. Banks may also need to consider the potential opportunity costs that come with partnerships: the decision to enter a partnership instead of developing a capability in-house usually closes the door on other opportunities. Furthermore, the cost to unwind a partnership can be significant, should it not live up to expectations.

<sup>10</sup> Alessio Botta, Adolfo Tunon, Reema Jain, Pamela Mar, and Andrew Wilson, *Reconceiving the global trade finance ecosystem*, McKinsey in collaboration with the International Chamber of Commerce and Fung Business Intelligence, November 2021, [mckinsey.com](https://www.mckinsey.com).

<sup>11</sup> *Standard definitions for techniques of supply chain finance*, Global Supply Chain Finance Forum, 2016, [iccwbo.org](https://www.iccwbo.org).

<sup>12</sup> “SWIFT and ICC collaborate to drive sustainability in trade finance,” SWIFT, March 10, 2021, [swift.com](https://www.swift.com).



### **An economically challenging business model**

The third major constraint is the economic challenge of scaling an offering that relies largely on discounted pricing for sustainable companies. What is more, the gap between trade finance supply and demand has reached \$1.7 trillion, with rejection rates for SMEs running at 40 percent.<sup>13</sup> Banks should consider how much funding can be designated for sustainable finance products in order to meet clients' needs and realize trade finance's potential contribution to the UN SDGs.

One way to address this constraint would be an asset-light model, where the bank creates a class of sustainable trade finance assets for large investors. This originate-to-distribute model creates capacity for banks to issue further credit and offers investors several advantages, typically including low default rates, short-term durations, and self-liquidation.<sup>14</sup> To succeed, this approach should be accompanied by continual improvements in digitization and standardization to offer investors more transparency.

### **Next steps: How to build a sustainability value proposition**

Banks differ in how far along they are in developing a sustainability value proposition for GTB. While several have incorporated sustainability elements in select cash management and trade finance offerings, many lack a clear sustainability strategy for the enterprise. Others have launched solutions to match their competitors or in response to a client request, but these initiatives are often launched without assessing the potential impact of offering the solution to other clients.

#### **Choose the appropriate sustainability strategy**

Across global markets, any GTB service provider must consider the expectations of customers, investors, regulators, and the public and think holistically about how to add value to corporate and SME relationships with a sustainable GTB offering. Based on their starting point, banks should consider the following elements for implementing the sustainability strategy:

— *Banks without any sustainable GTB offering* should start by embedding sustainability

principles and goals within their business line strategy in alignment with the bank's broader sustainability strategy. This strategic vision should also broadly identify the sectors expected to benefit the most from the bank's sustainable GTB offering.

The next step is to identify the priority products and criteria for sustainability ratings, bearing in mind that these constitute the core value added for clients from diverse industries and segments. Leaders should start by stating clearly which elements of ESG the sustainable GTB offering will cover and then—in many cases, in partnership with an ESG-ratings company—develop metrics for assessing performance to discrete objectives. These metrics can be applied, on the one hand, to the evaluation of financial instruments or products to be offered to clients and, on the other, to the establishment of sustainability ratings for SCF platform participants.

- *Banks with basic sustainable GTB products* should complete their offering by extending beyond trade finance products to enhance traditional cash management products—for example, deposits, commercial cards, and acquiring—with sustainability features. These banks will also need to build partnerships, as sustainability is part of an ecosystem where different organizations fulfill distinct roles, such as maintaining the technology platform, enabling sustainability-linked transactions, administering sustainability ratings, and managing data assets to ensure consistent execution and transparency. Selecting partners can be an arduous journey, encompassing identification and evaluation of potential partners and implementation and integration with the platform. Several cross-industry groups are developing services to leverage transaction data to reduce carbon emissions. Banks can partner with fintech or open-banking platforms to access open-banking data.
- *Banks with a leading offering* should focus on building value-added services in sustainability

<sup>13</sup> "Global trade finance gap widened to \$1.7 trillion in 2020," Asian Development Bank, October 12, 2021, adb.org.

<sup>14</sup> *Reconceiving the global trade finance ecosystem*, November 2021.

(such as advisory, certification, and analytics), which could help to differentiate a bank's sustainability offering. Advisory services could provide deep knowledge on regulations and insight into the implications of sustainable GTB and sustainability ratings across diverse industries. Certification should provide legitimacy and consistency in the increasingly complex population of sustainability rating agencies, and banks should be able to provide KPIs and tracking mechanisms to monitor corporate clients and their suppliers and customers. Finally, analytics should provide a rigorous framework to guide clients' and banks' decisions about how to maximize the impact of the actions taken to reduce emissions. This capability could be developed in-house or in partnership with specialized data analytics providers.

#### Go to market and then accelerate

Banks should define a go-to-market strategy for sustainable GTB, prioritizing sectors that have higher overall emissions and are more relevant to the institution's business. Examples of priority sectors might include energy, retail and luxury, and automotive and industrials. By targeting industries with higher scope 3 emissions, banks have greater potential to deliver a significant improvement in the sustainability performance of corporate clients and their suppliers.

Once a bank has launched any offering, it is important from the beginning for it to promote

and accelerate the adoption of the sustainability offering by engaging effectively with clients in target sectors, using automated monitoring and feedback loops to improve messaging. It will also be crucial to train sales specialists for sustainability-linked products, as well as educate colleagues about the bank's overall position on ESG principles and what the new sustainable GTP offering can do for clients (and for society)—all supported by a robust digital engagement and communication strategy. Internal communication across the bank should be continuous, fast, and consistent. Sharing success stories, including public recognition of clients who achieve new levels of certification, also can strengthen engagement with both clients and colleagues.

Sustainability in GTB represents a significant opportunity for banks not only to meet their ESG objectives but also to expand revenue as they help customers meet their business and ESG needs. Moreover, the transaction banking business, through which different flows converge, has the potential to deliver an outsize impact on the reduction of societies' GHG emissions by serving as a channel to deliver tools for improving sustainable practices at client organizations in diverse industries around the globe. For all these reasons, success at sustainable GTB is an imperative; achieving it depends on implementing a comprehensive and coherent strategy.

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Global Banking & Securities

# Central bank digital currencies: An active role for commercial banks

With central banks increasingly exploring central bank digital currencies (CBDCs), now is the time for commercial banks to establish their role in a fast-changing landscape.

*by Olivier Denecker, Arnaud d'Estienne, Pierre-Matthieu Gompertz, and Elia Sasia*



**Roughly 90 percent** of the world's central banks are pursuing central bank digital currency (CBDC) projects.<sup>1</sup> Some, including those in the United States and South Africa, are at the exploratory phase; others are development projects (the European Union) and pilots (China). In some locations, including Nigeria and the Bahamas, solutions are already operable, and central banks are looking to expand. Despite the high level of activity, most CBDC initiatives today remain in the nascent stages of market development and, in many cases, even technical design. However, alongside the conceptually similar but quite distinct digital coins being issued by private entities, this form of digitally issued public money stands at the forefront of central bank innovation in the monetary space.

In particular, four trends have likely spurred central bankers' interest in CBDCs:

1. Cash usage has rapidly declined—by roughly one-third in Europe between 2014 and 2021, dropping to as low as 3 percent (in Norway) of overall payment transactions. This trend threatens to marginalize the sole source of central bank or public money in many economies, requiring central banks to reassess their role in the monetary system.
2. Growing interest in privately issued digital assets signals potential competition with central banks in their role as the sole provider of monetary value in sovereign economies. Various recent sources show a meaningful share of consumers worldwide actively involved in trading, transacting, or holding digital assets, with particularly high rates in emerging markets. For example, 10 percent of UK adults reported holding, or having held, a crypto asset.<sup>2</sup> The European Central Bank (ECB) has indicated that as many as 10 percent of households in six large EU countries owned digital assets.<sup>3</sup> And roughly one-fifth of respondents to a McKinsey survey—22 percent in India, 20 percent in

Brazil, and 14 percent in the US—reported that they held digital assets as part of their financial portfolios.<sup>4</sup> Some see consumer use of digital assets as a potential challenge to fiat currency as a unit of measurement for transactions and value.

3. Some central banks perceive erosion in their role as payments innovators—thought leaders advancing next-generation models beyond today's cash and infrastructure. CBDCs offer the potential to improve on legacy cash use cases, such as by reducing cross-border transaction costs and enhancing financial inclusion. By spearheading the design process and clarifying use cases, central banks can ensure that these strategic conversations take place in a public forum.
4. Many central banks are looking to establish greater local governance over increasingly global payment systems. As the appointed guardians of systemic stability, central banks see potential benefits of establishing a CBDC as the anchor of local digital payment systems.

While most CBDC initiatives are nascent, commercial bank leaders would be well advised to engage central banks in order to learn more about these digital initiatives and help shape future models. Along with summarizing the various models under consideration, this paper outlines the risks, opportunities, and potential paths forward for various stakeholders.

### **A central bank solution with many permutations**

CBDCs differ fundamentally from other forms of digital coins in that they are directly backed by central bank deposits or a government pledge. Therefore, they offer stable value and can aim to combine benefits in the areas of trust, regulatory stability, and audit transparency.<sup>5</sup>

<sup>1</sup> Anneke Kosse and Ilaria Mattei, *Gaining momentum—Results of the 2021 BIS survey on central bank digital currencies*, Bank of International Settlements (BIS) Papers, number 125, May 2022, bis.org.

<sup>2</sup> Alice Fearn and Charlotte Saunders, *Individuals holding cryptoassets: Uptake and understanding*, HM Revenue & Customs, UK government, February 2022, GOV.UK.

<sup>3</sup> Lieven Hermans et al., "Decrypting financial stability risks in crypto-asset markets," European Central Bank, May 2022, ecb.europa.edu.

<sup>4</sup> McKinsey Survey in United States (July 2022), India (March 2022), and Brazil (June 2022).

<sup>5</sup> For more on how the US Federal Reserve currently views the issues surrounding CBDCs, see *Money and payments: The U.S. dollar in the age of digital transformation*, Federal Reserve, January 2022, federalreserve.gov.

CBDCs can be deployed under a variety of technology models, depending on a central bank's desired objectives and use cases. CBDCs do not necessarily rely on decentralized technologies, as they can be administered by central bank agents as well as distributed via digital-ledger technologies. They can be held on physical devices such as cards or phone wallets or exist as a purely digital book entry. They can be issued as stand-alone tokens (stored at any of multiple carriers) or as account-based assets held directly at the central bank.

A fundamental decision for central banks is whether to issue a retail or wholesale CBDC. Each has its own set of objectives, use cases, and end users. Wholesale CBDCs mostly target financial institutions (banks and nonbanks) and large corporate treasury centers as their primary users, and they aim to improve the efficiency of settlements—both payments and securities, domestic and cross-border. This may or may not involve providing nonbanks with direct access to central-bank accounts.

Cross-border settlements may be a particularly compelling use case for wholesale CBDCs, given the high cost and slow execution of current processes and the opportunity to reduce counterparty risk by enabling connected and instant settlement between parties. For example, Project Aber, launched by the central banks of Saudi Arabia and United Arab Emirates, tested the use of a jointly issued digital currency as an instrument for domestic and cross-border settlement between the two countries. For wholesale CBDCs, the use of new and often “distributed” technologies is frequently central to the exercise, a potential means to expand access to public money.

Retail CBDCs target consumers and local businesses as end users, with possible use cases including disbursement of social benefits, an alternative to cash for e-commerce point-of-service and bill payments, and enabling of seamless peer-to-peer transactions for banked and unbanked users. In more complex initiatives, CBDCs combined

with smart contracts,<sup>6</sup> such as the Bank of Israel's initiative, aim to improve payments convenience. Examples include payment of sales tax directly to tax authorities at point of sale and automated distribution of social benefits for economic relief conditioned on the recipients meeting defined requirements.

### **A growing central bank imperative**

Although central banks quote numerous reasons to pursue CBDC projects, surprisingly few such projects appear to be driven by specific customer use cases or needs. Notably, the case for CBDCs to date has been focused more on policy and systemic objectives than by specific customer requirements or benefits. CBDCs could enable central banks to address a wide range of systemic objectives—ensuring financial inclusion, reducing fraud and money laundering, guaranteeing sovereign alternatives for digital payments, stimulating local payments innovation, and creating a new vehicle for monetary policy. The objectives central banks have identified in their pursuit of CBDCs at this stage typically fall into one or more of five categories.

### **Developing ‘cash 2.0’**

Central banks are under pressure to deliver a next-generation payments vehicle providing several of the features that users value about cash: ubiquity, universal acceptance, and anonymity. Also, in both emerging markets and developed economies, reduced cash usage and rising digitization of financial services have heightened financial inclusion challenges.

CBDCs could equip central banks to play a direct role in facilitating financial services access for the unbanked who are reluctant to connect to commercial banks or in some cases may be overlooked because they lack sufficient revenue potential. CBDCs could also enable accounts to be held directly on the central bank ledger, with account holders accessing and transacting with their balances through digital wallet applications linked to the central-bank account through APIs.

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<sup>6</sup> Contracts that can be self-executing and self-enforcing, without the need for intermediaries.

### **Securing the monetary anchor**

The reduction of cash and the advent of alternative payment currencies have threatened the role of public money (as opposed to commercial bank money) as the fundamental unit of value measurement. An increasing share of commerce is poised to be conducted through alternative payment means that lie outside the bounds of regulatory control. CBDCs could help preserve the role of public fiat in monetary policy, securing central banks' role in protecting financial stability on their markets.<sup>7</sup>

### **Preserving central banks' role in orchestrating payments services innovation**

With the growth of nonbank players in payments, central banks face potential erosion of their oversight role in important areas such as data management, settlement systems, and customer rights—areas they have historically supervised through traditional licensed banks. Central banks have also struggled to achieve efficiencies in areas such as cross-border payments.

A CBDC alternative would allow more direct control and influence over enforcement of minimal market standards. Privacy issues would need to be carefully managed, however, given the (real or perceived) access to detailed transaction data afforded to government entities through a CBDC.

### **Keeping pace with international currency advances**

To ensure the preeminence of their currency zone—a core central bank objective—central banks must keep pace with their international currency peers. Most also aim to maintain at least one scalable solution for economic value exchange beyond the control of other countries or central banks. CBDCs are one of the potential policy vehicles in this cross-border competition.

### **Stimulating financial inclusion**

CBDCs can play a key role in providing access to digital payments without the requirement of a bank account. Access would be facilitated by a central bank-issued digital wallet. The Nigerian and

Jamaican CBDC models (see sidebar, “Country case studies”) offer a template for how this could be accomplished.

### **Potential for radical redesign**

Ultimately, the success of CBDC launches will be measured by user adoption, which in turn will be tied to the digital coins' acceptance as a payment method with a value proposition that improves on existing alternatives. If such benefits remain unproven, CBDC efforts may fall short of adoption targets. In this scenario, the ramifications for traditional banking and payments players will be limited. However, should initiatives progress beyond the pilot stage, central banks and governments are likely to deploy all tools at their disposal to foster success, given the critical policy objectives just outlined, as well as potential affect on central bank credibility. To be successful, CBDCs will need to gain substantial usage, partially displacing other instruments of payment and value storage.

The successful launch of a CBDC involving direct consumer and business accounts could displace a material share of deposits currently held in commercial bank accounts and could create a new competitive front for payment solution providers. Bankers are already facing the need to strengthen their client relationships beyond the traditional deposit model; CBDCs could exacerbate this challenge.

Commercial banks will likely play a key role in large-scale CBDC rollouts, given their capabilities and knowledge of customer needs and habits. Commercial banks have the deepest capabilities in client onboarding (including know your customer) and the execution and recording of transactions, so it seems likely that the success of a CBDC model will depend on a public-private partnership (PPP) between commercial and central banks, or at minimum a less formal collaborative model that promotes a digitized monetary environment across the banking and payment value chain.

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<sup>7</sup> See Markus Brunnermeier and Jean-Pierre Landau, *The digital euro: Policy implications and perspectives*, European Parliament, January 2022; [europarl.europa.eu](http://europarl.europa.eu); and *Gaining momentum*, May 6, 2022.

## Country case studies

Some countries' central banks have already tested CBDC concepts. The experiences of Nigeria, China, and Jamaica suggest lessons that may apply in other parts of the world.

### Nigeria's eNaira

Nigeria became the first African country to introduce a digital currency with the October 2021 launch of retail CBDC eNaira. Its intended benefits include faster and more equitable distribution of cash assistance to households and communities participating in social welfare programs, lower transaction costs and faster settlement, efficient cross-border transaction capabilities, and traceability and security to limit fraud.

The eNaira app garnered almost 800,000 downloads in the first seven months following its launch. According to some reports, half of those downloads have not been activated. Merchant adoption of digital currency has been similarly limited, with fewer than 100 active retailers accepting eNaira payments as of May 2022—a small number, given Nigeria's status as Africa's largest economy.

The low initial uptake of eNaira has been attributed to limited knowledge of the CBDC and how it functions, fear of exposure to security breaches, and poor internet access in some regions. In response to these challenges, the Nigerian government recently announced that eNaira will be made available on feature phones via Unstructured Supplementary Service Data (USSD), which will expand the potential market by 100 million citizens on top of the current 25 million to 40 million smartphone holders.<sup>1</sup> The government also recently sponsored a hackathon to promote visibility and identify key feature and technology improvements.

### China's digital yuan

The People's Bank of China, China's central bank, in 2019 began a large-scale pilot of its E-CNY, spanning 15 cities. As of May 2022, 4.5 million merchant wallets and 260 million transactions worth over 83 billion renminbi have been performed through the E-CNY pilot, focused on transportation, government services, shopping, and other consumer-lifestyle use cases.

Considering China's relatively high penetration of electronic consumer payments, a fully implemented E-CNY could address the last mile in transitioning China to a fully electronic and real-time payment system. Internationally, E-CNY could provide an alternative for global trade settlement, which remains highly reliant on US dollars and the SWIFT network.

E-CNY employs a hybrid design model, which is account based on the wholesale layer and token based at the retail level. According to published documents, state-owned banks, commercial banks, and payments networks will all play operating roles, with both individual and merchant wallets being created and maintained by commercial banks.

Although the pilot has encompassed significantly more volume than any other country's CBDC initiative, it remains a small fraction of China's overall payments activity. An official time for a formal E-CNY launch has yet to be announced; a high-profile pilot expansion to the 2022 Beijing Summer Olympics was muted by the exclusion of spectators.

Meanwhile, pilot testing is being extended to cross-border payments. For instance, pilot testing of cross-border payments between Mainland China and Hong Kong—which has a separate legal and banking environment and infrastructure—is under way. The pilot involves 200 employees and selected merchant clients of the Bank of China (Hong Kong), a subsidiary of the state-owned Bank of China and Hong Kong's second-largest commercial bank.

### Jamaica's Jam-Dex

Jam-Dex, which launched in June 2022 and is the first CBDC to be formally ratified as legal tender, is a relatively simple retail offering with “streamlined” KYC requirements and, in its initial iteration, no advanced use cases such as cross-border payments or smart contracts. Although Jam-Dex leverages distributed technology, it is not blockchain based, setting it apart from the Bahamas' Sand Dollar and the Eastern Caribbean Central Bank's DCash.

The Jamaican Central Bank is pursuing an indirect model, collaborating with the private sector for interfaces and issuance of digital wallets while directly managing the back end, infrastructure, and ledger. The goal is to offer a digital alternative to cash that is seamless, secure, and simple to use. Early Jam-Dex use cases emphasize peer-to-peer payments and payments to small and micro-businesses, including those without traditional bank accounts, enhancing financial inclusion.

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<sup>1</sup> Steve Kaaru, “Nigeria's eNaira now available via USSD to boost adoption and financial inclusion,” CoinGeek, June 19, 2022, [coingeek.com](https://www.coingeek.com/news/nigeria-e-naira-now-available-via-ussd-to-boost-adoption-and-financial-inclusion/).

However, depending on a central bank's design choices—and there is a multitude of options to consider—a successful CBDC introduction could prove highly disruptive to the traditional banking sector and could simultaneously spur a new wave of financial services innovation.

Estimates vary widely on the potential reduction in commercial bank revenues stemming from a successful retail CBDC launch, but the combined affect on interest (through deposit substitution) and transaction fees (erosion of payments volumes) could quickly reach billions of euros. A more moderate degree of market uptake and CBDCs targeted to specific use cases—wholesale, cross-border or financial inclusion—would, of course, have a smaller impact.

Nonfinancial actors also will feel the impact. Merchants and consumers embracing CBDCs may be enticed by fully digital payment processes featuring lower transaction fees and faster settlement. Corporates and governments could benefit from CBDCs through faster and cheaper transfer of capital (including government subsidies) and enhanced risk control.

While it is possible that governments could mandate CBDC acceptance by all payees through a legal-tender process and perhaps require their use given certain transaction criteria, a mandate in itself is not sufficient to ensure widespread adoption. Therefore, promoting some form of demonstrable benefits for participants, banks, payment players, and nonfinancial actors will be necessary. Creation of this business case for the economy as a whole will remain a key point of reflection for CBDC projects.

### **Central banks as CBDC architects**

Each of the multiple CBDC design options is suited to a different set of strategic objectives. As central banks set their priorities and determine how best to achieve them, we believe they should consider five questions:

1. *What is the end game in terms of adoption and ubiquity compared with traditional money?*  
Business cases and scenarios should be based on a market assessment of the current

and future payments landscape and realistic adoption goals.

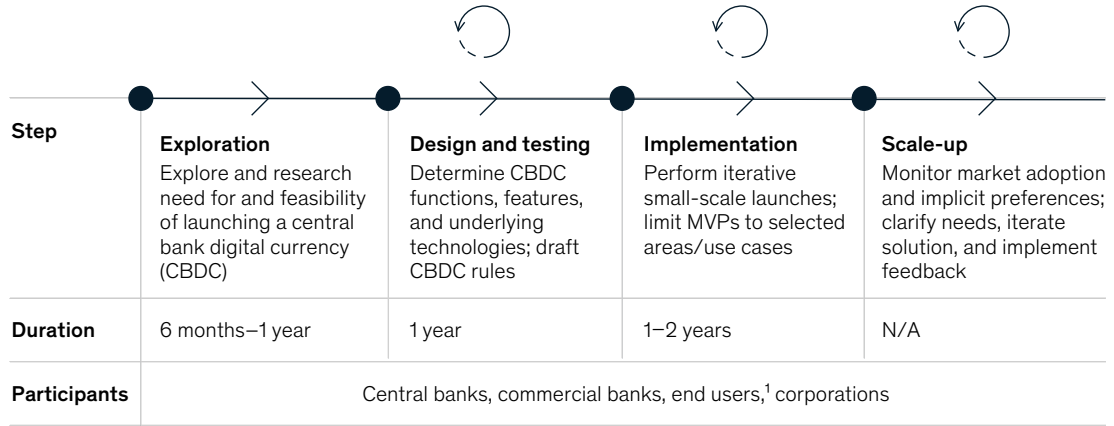
2. *Which constituency(ies) does the CBDC aim to address?* The first step in achieving CBDC policy goals is determining scope. A focus on any combination of user segments—private citizens (consumers), commercial banks, and corporations—can be effective. Design choices should be based on the business cases and features most valued by users. Decisions should draw upon extensive expertise building fintech assets, often from outside of traditional central bank organizations.
3. *What role will the central bank play?* Participation could be deep or light, and the adoption goal may be best accomplished by establishing PPPs that leverage long-standing relationships with commercial banks and key corporate entities.
4. *What resources and capabilities will be required?* Central banks are likely to need new decision-making processes. Request-for-proposal (RFP) processes can be valuable exercises to assess technology options. In addition, central banks should develop enhanced change management practices and acquire new talent experienced in developing partnerships.
5. *What changes will central banks need to enforce beyond payments?* Regulatory changes would be required to achieve several of the previously stated objectives. Hurdles in regulation, commerce enablement, and fiscal rights will need to be cleared. Goals like financial inclusion, to cite one example, could be advanced by reducing minimum balance thresholds, made possible by lower costs, as well as simplifying (without weakening) KYC checks through digital ID solutions.

By adopting an agile approach, central banks can deploy a CBDC within three years, compared with five years or more using a traditional waterfall development model (Exhibit 1). Although adoption and realization of scale will likely prove to be longer-



Exhibit 1

**CBDC deployment can be achieved in three years by applying an agile approach.**



<sup>1</sup>Eg, merchants and consumers depending on wholesale or retail deployment. Source: CBDC case studies; World Economic Forum

term efforts, lessons from early launches and a set of best practices (Exhibit 2) can help foster early market acceptance.

**A key role for commercial banks**

Public–private partnerships will be essential to the success of a CBDC launch, enabling central banks to leverage established infrastructure and client relationships. Such alliances will help central banks implement use cases aligned with end-user needs, complementing their gaps in capabilities and knowledge of consumption habits, particularly in a retail scenario. By engaging commercial banks and other private stakeholders (technology enablers, merchants, users) in the launch process, central banks will also foster a broader sense of ownership, manage fears of displacement, and increase the probability of successful adoption.

Different countries will likely pursue CBDC models aligned with their specific goals, capabilities, and stakeholders. The resulting multi-model environment will require global banks to clearly state their CBDC strategy—both globally and locally—and engage with central banks in other countries.

We offer a few key questions that should be helpful for commercial banks in framing productive conversations about adapting to CBDC models.

- What benefits and objectives is a central bank pursuing with its rollout, and what are the implications for bank and nonbank competitors in the region? Launches prioritizing efficiency gains, for instance, may alter the competitive battleground, giving commercial banks a platform to compete with fintechs’ cross-border transfer solutions, or the other way around.
- What role do commercial banks seek to play in the new ecosystem, consistent with their overall strategy, digital capabilities, and available capital? Engagement models may include “first movers” who co-create an emerging CBDC ecosystem and “selective adopters” who incrementally adjust existing capabilities to accommodate CBDCs. Players must identify the primary risks and benefits associated with this position, assess their likelihood and impact, and determine potential mitigation levers.

Exhibit 2

**Central banks that apply eight best practices can improve the chances of CBDC adoption.**

**1**

**Prioritize 1–2 use cases** with an improved **user experience** and greater **customer value** than existing alternatives

**2**

**Maximize simplicity of onboarding and usage** for consumers and **ease of integration** for merchants

**3**

**Build a strong footprint in local markets**, leveraging **brand awareness** and **loyalty**

**4**

**Focus on niche segments**; pursue a phased rollout, starting with use cases that offer high volume and address acute pain points

**5**

**Create incentives** for businesses and consumers to adopt digital currency

**6**

**Build trust** from the beginning by delivering on promises; better to succeed at something simple than half-deliver on something complex

**7**

**Seek partnerships to accelerate scale-up** while maintaining a central relationship with key customers

**8**

**Leverage existing payment infrastructure** to accelerate time to market

Source: McKinsey analysis

- Can commercial banks identify possible alternative digital-asset strategies to address central bank–driven market evolution? The benefits of different approaches should be modeled for both the bank and its clients, and the implications shared early on with the relevant supervisory bodies. The capabilities required to implement such strategies must also be assessed, recognizing that multiple forms of digital coins may well coexist for some period, if not permanently.

- 2. A clear or substantiated market value proposition has yet to be documented. Some consider CBDC benefits to be limited relative to already-established private solutions. CBDCs, which are non-interest-bearing in most models, rarely offer advanced features like smart contracts.

**What next? A CBDC reality check**

Most CBDC launches remain too new to assess fully, but as demonstrated in the sidebar, early adoption has been mostly tepid. What is holding back central banks from achieving their goals more rapidly? Early experience reveals four primary hurdles for effective rollouts:

- 1. Many central banks have struggled to manage CBDC projects across an array of development *stages*, from research to full rollout, as they need to foster alignment across multiple

- 3. Trust remains a hurdle for a meaningful share of citizens and system participants, who question the motives behind CBDCs (often suspecting governments of aiming to monitor or restrict financial activities) or fear cybersecurity risks.
- 4. Technical challenges are evidenced by service interruptions suffered by some existing *solutions*, as well as the digital divide that exists in rural areas and faces certain small businesses.

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With most central banks either in a pilot phase or in the process of developing a CBDC, progress is poised to continue over the coming year. Although we have yet to see a fully successful rollout, the policy objectives underpinning many of these pilots is likely to ensure significant pressure for adoption. Given the ongoing decline in cash usage, broad-based interest in digital assets, and persistent concerns about sovereignty and monetary stability, central banks appear highly motivated to continue exploring the potential of CBDCs.

Nonetheless, CBDC launches involve some meaningful risks for the existing banking and

payments landscape, whether via payment system cannibalization, flight of commercial bank deposits to a “risk free” CBDC alternative during times of financial uncertainty, or exceptional pressure on prices and costs of existing payment systems. Unless properly planned for across the ecosystem, a widely adopted CBDC could fuel significant disruption of legacy financial services economics and customer relationships. Banks and payments players will of course still need to determine a positive CBDC business case in order to gain internal support and endorsement.

A successful CBDC launch is likely to require cooperation between central and commercial banks, in an effort to develop a more inclusive and efficient monetary system with a sustainable business case. For either party, a go-it-alone course of action is far less likely to succeed.

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Global Banking & Securities

# Sustaining digital payments growth: Winning models in emerging markets

Digital payment transactions are skyrocketing in emerging markets as innovations proliferate. Banks, fintechs, and telecom companies must quickly develop their strategy to compete for market share.

*by Reet Chaudhuri, Carlyne Gathinji, Gustavo Tayar, and Evan Williams*



**Digital payment transactions** have grown rapidly in emerging markets during the past two years, as the pandemic accelerated shifts to contactless payments and e-commerce.<sup>1</sup> E-wallets proliferated, real-time account-to-account transfers took off, and industry players formed new partnerships to access capabilities and broaden their customer base. Some of the fastest growth in digital payments occurred in Africa and Southeast Asia, where low banking penetration gives payments providers opportunities to capture untapped potential and reach underserved populations.

Along with new opportunities, banks, telecom companies, and fintechs have experienced intensified competition. Banks maintain a leading position in payments in most countries, but nonbanks own the dominant front-end payment application in some emerging markets, including India, Kenya, the Philippines, and Vietnam.

This article addresses the remarkable opportunities and competitive pressures of the fast-growing emerging markets. We explore which digital payments models are best placed to gain momentum in these markets, which monetization paths payments providers are likely to pursue, and what innovations may lie on the horizon.

### **Digital payments continue to increase**

Globally, between 2018 and 2021, the number of noncash retail payment transactions have increased at a compound annual growth rate of 13 percent; while in emerging markets, that figure is 25 percent. Some of the fastest growth occurred in emerging markets in Africa (Morocco, Nigeria, and South Africa) and Asia. Strong growth is expected to continue in some emerging markets over the

next few years, with projected CAGRs of 15 percent between 2021 and 2026.

Four major trends have driven the growth in digital payments. First, the pandemic accelerated the shift from cash to contactless digital payments that was already under way among consumers. Second, e-commerce continued to grow and evolve, with global volumes increasing by 25 percent between 2019 and 2020 and expected to grow by 12 to 15 percent a year to 2025.<sup>2</sup> Third, government pushes for cashless payments to facilitate interoperability, plug tax leakages, and ensure the effective distribution of aid accelerated the take-up of new digital payment systems such as Wave in Côte d'Ivoire, UPI in India, and Pix in Brazil. Finally, investors' appetite for digital payments grew, leading to a proliferation of payments-focused fintechs. In Africa, for instance, these firms accounted for about 40 percent of the \$5.2 billion in tech start-up capital in 2021.<sup>3</sup>

Despite this explosion in digital retail payments, cash remains king in some markets. In Africa, it was used in 95 percent of transactions in 2021, according to McKinsey's Global Payments Map. Cash is distributed via extensive networks of retail agents: for instance, M-Pesa has more than 600,000 agents across seven African countries,<sup>4</sup> and MTN has more than 970,000 across the continent.<sup>5</sup> These agents help less digitally savvy customers make bill payments, buy airtime, access cash from their wallets, and conduct other transactions. Cash is still the top in-person point-of-sale (POS) payment method in Southeast Asian markets, including Thailand (where it accounts for 63 percent of POS transaction value), Vietnam (54 percent), Indonesia (51 percent), and the Philippines (48 percent).<sup>6</sup> In Latin America, where credit and debit cards are more established, cash accounts for 36 percent of POS transaction value.<sup>7</sup>

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<sup>1</sup> "Digital payments" include e-wallet transactions, instant bank transfers, digital bill payments, online card payments, and other forms of noncash payments made by and to businesses, individuals, and governments. "Emerging markets" refers to markets in emerging Asian countries, Africa, and Latin America.

<sup>2</sup> McKinsey analysis based on data from Euromonitor and company filings; 25 percent growth rate derived by comparing the six months ending October 31, 2019, with the six months ending October 31, 2020.

<sup>3</sup> Startup Deals Database, Africa: The Big Deal, August 24, 2022.

<sup>4</sup> Kevin Namunwa, "51 million customers, 600K agents and more; M-Pesa celebrates 15 years," *CIO Africa*, March 7, 2022.

<sup>5</sup> MTN Group annual report, December 31, 2021.

<sup>6</sup> *The global payments report*, Worldpay, 2022.

<sup>7</sup> Ibid.

# The emerging markets where banks are the strongest, such as Brazil and Nigeria, tend to have a solid payments infrastructure and a captive customer base stemming from historical first-mover advantage or regulatory restrictions on alternative rails.

## **Banks and third-party wallets compete for share**

In most emerging markets, the main contest for providing digital payments is between banks, with their mobile banking apps and wallets, and third-party mobile wallets owned by telecom companies, e-commerce platforms, and other ecosystem participants. Which side comes out ahead is likely to vary by country and depends to a large extent on market structure (Exhibit 1).

## **Markets where banks lead**

The emerging markets where banks are the strongest, such as Brazil and Nigeria, tend to have a solid payments infrastructure and a captive customer base stemming from historical first-mover advantage or regulatory restrictions on alternative rails. Banks also retain a leading position in markets where financial inclusion and card penetration are low and regulatory regimes have not permitted nonbanks to offer wallets to underserved populations.

In some markets with well-established banking infrastructure, governments have intervened to set up unified payment systems that offer instant bank transfers free or for a small charge. In the two years since its launch, Brazil's Pix has reached 122 million customers (equivalent to more than half of the population), more than 775 registered participants (including banks, government agencies, and other institutions), and some two billion transactions a month.<sup>8</sup> In India, UPI has attracted more than 300 registered banks, close to 260 million users, and almost six billion transactions a month.<sup>9</sup>

Banks in emerging markets may also want to take note of the strategies followed by their counterparts in developed markets such as Singapore and Hong Kong. Some banks are launching their own wallets, such as DBS PayLah! by DBS in Singapore. Others offer a wallet-like user experience on their mobile banking app and enable customers to complete transactions by scanning a quick response (QR) code or using a near-field communication (NFC)

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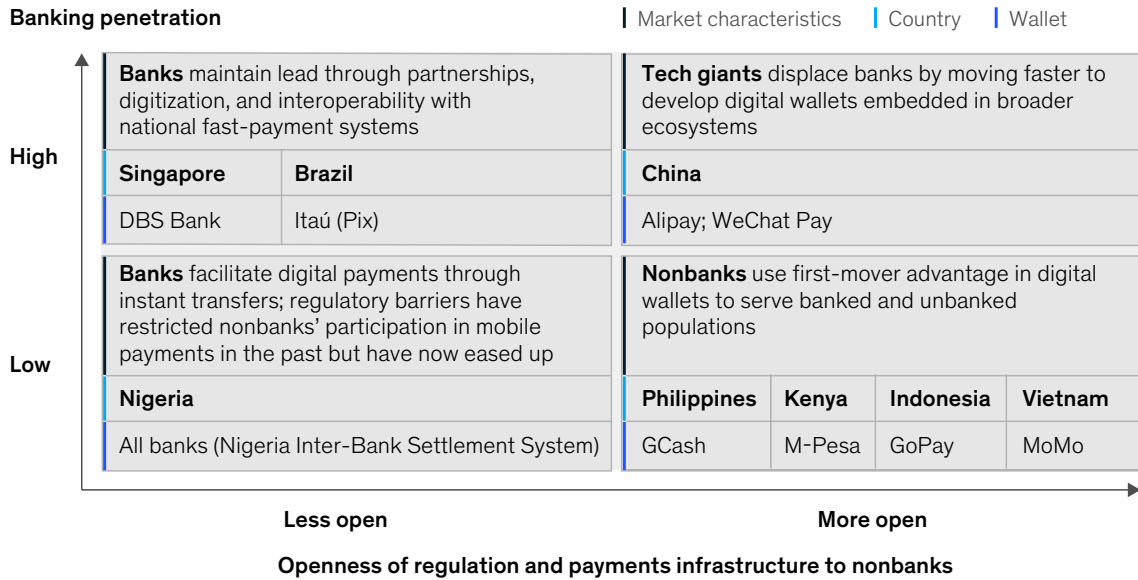
<sup>8</sup> Data as of August 2022 from Banco Central do Brasil.

<sup>9</sup> Anand Parthasarathy, "Made in India payment system is a runaway success that 10 nations are trying out," *Swarajya*, July 15, 2022.

Exhibit 1

## Market structure largely determines whether nonbank wallets can gain an edge.

### Dominant players by market characteristics



Source: McKinsey analysis

device. Yet others are partnering with Apple Pay, Samsung Pay, and Google Pay to ensure they keep the balances of customers' checking and savings accounts even if they miss out on the last mile of payments.

Some of these developed-market banks are now extending their digital wallets into emerging markets. For example, DBS recently announced a partnership with Nets and UnionPay International to make PayLah! available in 45 markets, including Malaysia and Thailand.<sup>10</sup>

#### Markets where nonbank wallets are ahead

Nonbank wallets tend to do best in markets with less developed payments infrastructure and where telecom companies and other providers

face no regulatory barriers in creating strong value propositions to reach underserved customers. In Kenya and Ghana, for instance, telecom companies' first-mover advantage and innovative efforts to extend financial services to mass markets via mobile wallets have resulted in very high penetration levels.

Wallets are the leading e-commerce payment method in the Philippines (accounting for 31 percent of transaction value), Vietnam (25 percent), and Indonesia (39 percent), and they take second place in Thailand after bank transfers.<sup>11</sup> Some wallets have achieved very high penetration levels in these markets. In the Philippines, for example, the registered users of the top two wallets, GCash and Maya, account for 83 and 65 percent of adults, respectively.<sup>12</sup> Such successes can partly be

<sup>10</sup> Bryan Ng, "Shoppers can use PayLah! in Malaysia, Thailand, 43 other places abroad after DBS tie-up with Nets and China's UnionPay," *TODAY* (Singapore), June 21, 2022.

<sup>11</sup> *The global payments report*, 2022.

<sup>12</sup> Lisbet Esmael, "GCash tops 60M users despite rival's digital bank license," CNN Philippines, May 24, 2022.

ascribed to the digital know-your-customer (KYC) processes that enable wallets to offer customers a quick and easy onboarding experience. However, as regulatory regimes are simplified and banks are allowed to offer a fully digital KYC process instead of requiring new customers to visit a branch, this advantage will be eroded. Moreover, banks will benefit from the introduction of new QR standards—such as QRIS in Indonesia and QRPh in the Philippines—that are forcing wallets to open up their proprietary QR networks to bank apps.

### **An evolving landscape**

Meanwhile, banks are using easy instant payments (for instance, those offered by Pix in Brazil) and more user-friendly apps to encroach on territory previously carved out by wallets. Wallets have high adoption; more than 70 percent of the respondents to a recent survey<sup>13</sup> said they use digital wallets, with an average of three different wallets each. However, frequency of use and volumes transacted remain stubbornly low. In Brazil, half of the respondents to a McKinsey payments survey said they spent no more than 300 reais (\$56) a month through their digital wallets.<sup>14</sup> Despite heavy investment in rewards to acquire customers, wallet providers apparently have yet to create a value proposition strong enough to significantly change usage levels.

Meanwhile, banks and wallets are shaping a variety of partnerships to access capabilities, enhance their value proposition, and extend their geographic reach. In Africa, for instance, M-Pesa has partnered with KCB and NCBA to offer overdraft and microloan products, while the Tanzanian mobile remittance provider NALA has partnered with Equity Bank to gain access to the Kenyan market.<sup>15</sup>

### **Successful wallets will be part of ecosystems**

Wallets are more embedded in customers' daily lives when they are part of ecosystems. This enables them to grow by extending into e-commerce, ride hailing, food delivery, messaging, travel, and other adjacent categories. For instance,

prominent ride-hailing players in Southeast Asia, such as Grab and Gojek, are looking to capitalize on their high-frequency use and rich customer data by extending into groceries and other categories with larger ticket sizes. Players with higher ticket sizes but lower frequency of use, including e-commerce platforms Jumia in Africa and Shopee in Southeast Asia, are pushing in the opposite direction, seeking to boost user engagement through gamification and other approaches.

In Africa, M-Pesa morphed from a mobile money service into an ecosystem by forming partnerships to create a super app with seamlessly integrated mini apps in e-commerce, travel, health, agriculture, and other categories. User engagement and monthly revenue per user have risen, with more than a million monthly active users since the launch of the super app in 2021.<sup>16</sup> In Latin America, Rappi—a Colombia-based, on-demand delivery service with more than 30 million users and a presence in more than 100 cities in nine countries—has expanded its super app into offerings such as e-commerce, insurance, and loyalty points.

Wallets that are not part of an ecosystem involving e-commerce, social media, or ride hailing will find it tougher to succeed, since capturing customer mindshare is difficult when use cases are limited (Exhibit 2). Exceptions can be found, however, in markets where wallets have a significant first-mover advantage, such as MoMo in Vietnam.

### **Profitability remains a challenge in digital payments**

Margins for digital payments providers are already wafer thin and are likely to be eroded further by competitive intensity and declining fees. In many cases, payments are more a means to cross-sell other products than a profit center in their own right. Some services, such as peer-to-peer (P2P) payments, are usually offered to users for free in most markets. In Brazil, for instance, Pix is pushing margins down by offering P2P payments for free and person-to-merchant (P2M) payments

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<sup>13</sup> McKinsey Brazil Payments Survey, December 2021, n = 4,023.

<sup>14</sup> Ibid.

<sup>15</sup> "Tanzanian App, NALA, Partners with Equity Bank Kenya for Remittance Transfers," BitKe, July 25, 2022, bitcoinke.io.

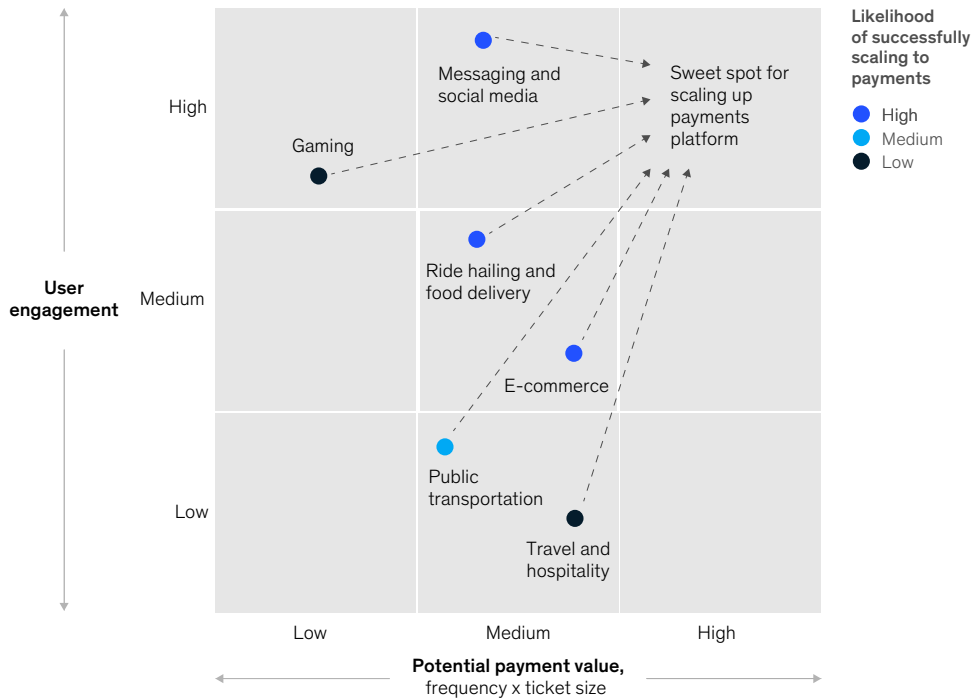
<sup>16</sup> See "Driven by purpose: 15 years of M-Pesa's evolution," McKinsey & Company, June 29, 2022.



Exhibit 2

**Social-media, e-commerce, and ride-hailing platforms are well placed to scale up into digital payments ecosystems.**

User engagement vs potential payment value for different digital ecosystems



Source: McKinsey analysis

at low cost. One of the few providers charging for P2P payments is M-Pesa, but it is coming under increasing pressure to reduce its charges, especially after adjusting its fee structure as part of pandemic-relief efforts.<sup>17</sup>

Not only do digital payments providers face squeezed margins, they also incur high acquisition and engagement costs because of the constant promotions needed to attract new customers and encourage more frequent use among the existing base. In addition, the cost of cash remains a challenge for wallets, though it is starting to come down as banking penetration improves. Globally, the majority of mobile wallets continue to post losses.

However, they are exploring monetization paths to create profitable income streams and introducing innovative new features to broaden and deepen their customer base.

**Wallets are exploring several monetization paths**

To create profitable income streams, wallets are entering other payment arenas, such as bill payment, merchant services, and remittances. They are offering a more comprehensive range of financial services, including investment and wealth management, lending, and insurance. And they are providing lifestyle services, including transport, e-commerce, and food delivery to become a one-stop shop for consumers (Exhibit 3).<sup>18</sup>

<sup>17</sup> "M-Pesa tariff reduction," press release, Safaricom, December 2020.

<sup>18</sup> "Mobile wallets: Southeast Asia's new digital life hack," McKinsey & Company, May 25, 2022.

Exhibit 3

**Successful wallets are extending into a range of payment types, financial services, and consumer lifestyle services.**

**Services offered by digital wallets, by region**

Distance from the core		Asia		Latin America		Africa	
		Alipay	GCash	PicPay	RappiPay	M-Pesa	Wave
Core	P2P payment	✓	✓	✓	✓	✓	✓
	Bill paying	✓	✓	✓	✓	✓	✓
Extended payments	Merchant services	✓	✓		✓	✓	
	E-government payments	✓	✓			✓	
	Remittance	✓	✓	✓	✓	✓	✓
Financial services	Investment and wealth management	✓	✓	✓		✓	
	Lending	✓	✓	✓	✓	✓	
	Insurance	✓	✓	✓	✓	✓	
Consumer lifestyle services	Transport	✓		✓		✓	
	E-commerce	✓	✓	✓	✓	✓	
	Food delivery	✓	✓	✓	✓		
	Travel and hospitality	✓	✓		✓	✓	

Source: Company websites; McKinsey analysis

*Extended payments.* In extended payments, wallets are offering a range of services, including merchant services such as universal payments acceptance, business digitization, loyalty programs,

inventory management, and reconciliation. For example, MoMo offers merchants a set of tools to improve discoverability, access a voucher marketplace, and integrate loyalty programs.

*Financial services.* Wallets' offerings span several types of financial services:

- *Investment and wealth management services* include micro investments for mass and upper-mass markets, money-market funds, and linked high-interest bank accounts with easy onboarding. In the Philippines, for instance, GCash partnered with CIMB Bank to launch GSave, which allows users to open a savings account from inside the GCash app without an initial deposit or maintaining a balance. Launched in 2018, GSave had a reported 5.3 million digital deposit account holders by May 2022.<sup>19</sup> In 2019, GCash launched GInvest to offer users opportunities to invest in money-market funds and listed unit investment trust funds (UITFs) for a very low initial investment. By 2022, it reported having more than a million registered accounts, a 7 percent share of domestic UITFs, and 77 percent of UITF accounts.<sup>20</sup>
- *Lending* can take place through partnerships or by using the wallet's own balance sheet. In Indonesia, OVO has bought a P2P license to overcome its lack of a lending license. In Africa, M-Pesa has taken advantage of its large subscriber base to pursue partnerships with banks to offer microlending and overdraft facilities. Wave, a wallet focused on Francophone West Africa, has recently received a regional e-money license that will enable it to extend its product portfolio by offering credit through partners.
- *Insurance* offerings include travel, health, personal accident, and other forms of coverage. In Brazil, for instance, PicPay has launched customizable insurance to protect users from unauthorized Pix transactions, money transfers, and purchases made using cards registered in users' e-wallets.<sup>21</sup>

As wallets extend their offerings into a wider range of payment solutions and financial services, some of them are transitioning into digital banks, a

trend most advanced in Asia. In the Philippines, the recently launched Maya app integrates Maya Bank's digital savings, credit, and other banking services with PayMaya's wallet and other cryptocurrency, micro-investment, and insurance offerings. In India, Paytm obtained a bank license from RBI and transitioned into Paytm Payments Bank. Though becoming a bank subjects wallets to higher capital requirements and greater regulatory oversight, it also allows them to monetize their surplus balances and offer their customers a broad suite of lending products.

*Consumer lifestyle services.* Wallets are also expanding into consumer lifestyle services in areas such as transport, e-commerce, entertainment, travel, and discount vouchers. In addition, they provide data services that enable mini-app providers to personalize their advertising. Being part of a super app gives these mini-app players access to an extensive customer base in return for a share of the revenues generated.

Some wallets are generating large income streams from distributor licenses for prepaid phone airtime or vouchers for video games and other services. After its launch in 2014, MoMo's mobile wallet gained most of its early revenues through airtime top-ups, having partnered with every telecommunications network in Vietnam. These relationships have since expanded to allow MoMo users to buy movie tickets, airline tickets, and online-gaming credit.<sup>22</sup>

In the future, some emerging-market wallets may wish to take advantage of their payment rails and credit-scoring systems by offering a platform-as-a-service solution, as global remittance player Wise has done with its Wise Platform. This would allow wallets to monetize their underlying technology and contribute to the development of other payments ecosystems.

### **Innovative features are being introduced to add more value for customers**

From our conversations with industry leaders and experts and our work with payments providers

<sup>19</sup> Darwin G. Amojelar, "GCash reports 5.3-million digital savings base," *Manila Standard*, May 20, 2022.

<sup>20</sup> Paul John Caña, "Investments for as low as P50: GCash democratizes investing with GInvest," *Esquire*, April 8, 2021; "Financial services are experiencing massive adoption in the Philippines through GCash," press release, GCash, September 28, 2021; "Mobile wallets," May 25, 2022.

<sup>21</sup> "Brazil's PicPay expands financial services with digital wallet insurance," *Latin America Business Stories*, March 28, 2022.

<sup>22</sup> "How a fintech outgrew banks in the mobile wallet market in Vietnam," *Asian Banker*, September 12, 2018.

globally, we have identified innovative features and functions that wallets are introducing to create added value. The following are a few examples:

- *Green initiatives.* Some wallets address customer and societal desire for action on environmental sustainability and climate change by supporting eco-friendly initiatives. For example, G-Forest offers GCash users green energy points for using cashless services or accessing their health app via GCash. By accumulating points, users can plant a virtual tree, which GCash matches by planting a real one. GCash reported that by January 2022, the scheme had attracted nine million registered users and “virtually planted” a million trees.<sup>23</sup> Some global apps are starting to include carbon-tracking features. ING, for example, is working with fintech Cogo to allow customers to measure the carbon footprint of their expenditures.<sup>24</sup> As consumers in emerging markets become more sensitive to sustainability issues, more wallets are likely to offer environmental features like these.
- *Loyalty programs and rewards for meeting personal goals.* To drive customer adoption and use, wallets offer loyalty programs or reward customers for meeting their own goals. For instance, users of the Toss app in Vietnam can set targets for the number of steps they will take each day. Those who hit their daily target receive loyalty points they can redeem for discounts.
- *Products with social features.* In China, WeChat and Alipay have extended the tradition of

giving red packets of cash for Lunar New Year by offering a digital equivalent. Launched in 2014, the service grew to more than 800 million users by 2018. Similarly, MoMo’s “lucky money” program enables users to exchange digital gifts and win rewards redeemable at partner stores.

Meanwhile, some wallets are pursuing innovations in cross-border transfers, which have remained costly and slow. In Africa, Chipper Cash has targeted specific remittance corridors; other players, such as MFS Africa, are looking to take advantage of intracontinental switches. Still others are using blockchain applications to reduce fees, as seen in Flutterwave’s partnership with the Stellar network to power corridors between Africa and the European Union.

Digital payment services have become an attractive and dynamic feature of the payments landscape in emerging countries. In particular, some new fintechs providing payment solutions have been able to grow rapidly during an era of cheap funding. But in the absence of a clear path to profitability, they may lose out to banks and other incumbent payments providers over time unless they can build a successful ecosystem around their core business. In a tighter funding environment, new entrants would be well advised to give careful consideration to market structures, monetization paths, and opportunities for innovation before venturing in with offerings of their own.

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<sup>23</sup> Richmond Mercurio, “GCash users plant milestone 1 million virtual trees in GForest,” *Philippine Star*, March 19, 2022.

<sup>24</sup> “ING trials carbon tracking app from Cogo,” *Finextra*, August 4, 2022.

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