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Competition in Mobile Payment Services - Background Note

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Competition in mobile payment services

What are the key determinants of competition in mobile payment services? How can pro-competitive regulations, competition advocacy and enforcement reduce barriers to entry and promote competition and innovation? This paper focuses on retail mobile payment services used at physical points of sale, online purchases and peer-to-peer money transfers. It presents the competitive landscape of mobile payments, and explores competition opportunities that enhance contestability, drive innovation and improve access, cost and quality in mobile payments. The paper also highlights ongoing competition risks worth monitoring, such as those posed by data asymmetries, entrenched market power and the gatekeeping of critical infrastructures. Importantly, it underscores the value of co-operation between competition authorities and regulators to ensure that mobile payment services remain competitive and continue to evolve in ways that benefit consumers and merchants worldwide.

Keywords: competition in mobile payment services, competition and innovation, competition policy, regulatory effectiveness

JEL codes: K21, L4, L41, L42, L43, E42

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Executive Summary

2. Mobile payments form an increasingly vital part of modern payment systems, which serve as the backbone of economic activity by enabling the smooth processing, clearing, and settlement of transactions. Efficient and competitive payment systems reduce friction and cost, support financial inclusion, and contribute to long-term economic growth and stability.

3. Retail payment systems generally operate through a multi-layered stack, including user-facing interfaces, retail-level payment rails, interbank clearing systems, and foundational settlement infrastructure. This paper focuses on front-end mobile payment services used at physical points of sale, online purchases, and peer-to-peer money transfers, which operate at the user-facing layer and enable the initiation of transactions via mobile devices, often in real time. While the paper touches on some aspects of the middle layer, it does not address and only incidentally refers to back-end wholesale settlement mechanisms, which constitute the foundational settlement infrastructures of the payment system, particularly in the bank-centric model (prevalent across most jurisdictions), as addressed in Section 1.[1] This foundational infrastructure, often managed or overseen by central banks, is responsible for the core interbank settlement of funds that enables the final transfer of funds. They represent the core foundational layer of most payment systems worldwide. While these systems may raise distinct competition issues of their own, including access, governance, or the interplay between public and private infrastructures, such questions fall outside the scope of this paper.

4. The rapid digitisation of financial services —accelerated by the COVID-19 pandemic— has transformed the payments landscape. The widespread adoption of mobile devices, coupled with the entry of FinTech and BigTech firms, has driven significant innovation in mobile payments.[2] These systems provide convenient alternatives to traditional payments such as cash and cheques, enabling real-time transactions via mobile devices, including smartphones, tablets, or wearables. They also hold the potential for enhanced competition through new entry, business models, and the creation of alternative retail-level payment rails.

5. Pro-competitive regulation, competition advocacy, and enforcement have played an important role in fostering innovation and market entry. However, the mobile payments ecosystem does not lack competition risks. In markets traditionally dominated by banks and card networks, incumbents have retained significant market power despite new entry. New entrants have gained significant market power, at times tipping the market, particularly in jurisdictions where mobile payments have substituted for underdeveloped traditional banking infrastructures.

6. Further, the integration of mobile payment services within broader digital ecosystems —especially those of BigTech firms— has raised competition concerns over the risks of entrenchment, data asymmetries, and the foreclosure of rivals. Mobile payment services are increasingly linked with adjacent markets, including e-commerce, social media, digital advertising, and cloud services. Despite some consumer benefits, this convergence may reinforce market power across interconnected sectors, increasing entry barriers and potentially limiting future innovation.

7. As mobile payments are projected to grow significantly, by 38% annually through 2030, reaching over USD 500 billion in global revenue (GrandView Research, 2025[1]), ensuring sustained competition is essential. Effective and timely enforcement, informed advocacy, and strong co-operation between competition authorities and financial regulators will be key to realising the full benefits of this innovation for consumers, merchants, and the broader economy.

8. To support competition authorities and policymakers, this paper builds on prior OECD work, including discussions on payment systems (2013[2]), disruptive innovation (2015[3]), digital disruption in banking (2020[4]), and recent developments in open banking and FinTech (2024[5]), and is structured as follows:

- **Section 1** addresses the mobile payment services landscape by providing the factual background, outlining the key determinants of competition in the sector, and the opportunities for competition and innovation that mobile payments can unlock.
- **Section 2** discusses emerging competition risks, including market power and tipping, data asymmetries, and multiple forms of exclusionary conduct.
- **Section 3** highlights competition authorities' and regulators' responses to these competition risks, including examples of pro-competitive initiatives.
- **Section 4** presents the paper's key findings and policy considerations, underscoring the importance of enforcement, advocacy, and institutional co-ordination.

9. The key policy considerations for competition authorities and regulators flowing from this paper include:

- **Understand the infrastructure on which mobile payments rely**. Control of the relevant technological and processing architecture, including retail-level payment rails, is critical to identifying mobile payment challengers' constraints and potential competition risks. This will inform assessments of where pro-competitive interventions may be most effective.
- **Identify and address regulatory bottlenecks.** Licensing or prudential requirements may inhibit the entry or expansion of innovative mobile payment providers. A review of the proportionality and objectives of existing regulatory frameworks can help ensure they support contestability while promoting other sought-after policy objectives.
- **Consider deploying targeted pro-competitive regulation.** Where market failures may emerge or persist, open banking, data portability, and interoperability tools can help rebalance the market. Measures like standardised APIs and reciprocal or asymmetric data-sharing obligations may facilitate multi-homing and reduce switching costs.
- **Consider fostering open alternative retail-level payment rails.** Government-led initiatives such as national switches or fast payment systems may promote competition by lowering entry barriers, reducing costs, and providing alternative retail-level payment rails to those controlled by incumbent payment providers.
- **Competition enforcement is essential to protect competition in mobile payment services**. This ensures the correct functioning of markets, driving lower prices, more choice, and quality improvements available to consumers and merchants while fostering innovation.
- **Monitor and address exclusionary conduct.** Practices such as restricted access to inputs, discriminatory technical conditions, and fragmentation of interoperability may hinder competition. Tying, bundling, or self-preferencing by firms with market power may require closer scrutiny, particularly within large digital ecosystems.
- **Assess partnerships and acquisitions dynamically.** While collaborations between incumbents and new entrants can generate efficiencies, they may also reduce rivalry or deter innovation. Merger reviews should consider current overlaps, potential competition, innovation trajectories, and access to essential infrastructures.

1 Mobile payment services landscape

10. Mobile payments are the fastest-growing form of payment globally (Statista, 2024[6]), enabling the purchase of physical goods and services and person-to-person transfers. In 2024, mobile payments accounted for 66% of e-commerce transactions and 53% of physical point of sale (POS) transactions worldwide, compared to 34% of e-commerce transactions and 47% of POS transactions purchased with cash or physical cards worldwide (Worldpay, 2025[7]). The provision of mobile payment services involves a variety of stakeholders and service models, which differ by jurisdiction. This Section will first address the types of mobile payments and the technology that enables them. It will then discuss the background of the payments sector's infrastructure, the various mobile payment providers and service models, and how this impacts the key determinants of competition. Lastly, this section discusses the opportunities for competition and innovation that mobile payments may unlock.

1.1 Types of mobile payments and the technology that enables them

11. Mobile payments can be broadly categorised based on the payment method, channel type, underlying instrument used for payment, and relevant technology infrastructure. Figure 1 below provides a visual representation.

12. There are two types of payment methods: proximity payments and remote payments.

- Proximity payments are mobile contactless payments used to pay directly at a POS that require a customer to be physically close to a terminal to effectuate a payment using their mobile device.
- Remote payments at virtual points of sale do not require physical proximity and can be effectuated from anywhere through text messages, mobile applications (apps), wallets, or websites.

13. The channels facilitating mobile payments include mobile wallets, standalone payment apps, and embedded payments integrated within checkout experiences. Mobile payment providers may offer multiple mobile payment channels.[3]

- **Mobile wallets** support remote and proximity payments and often provide additional features such as loyalty programmes, ticketing, or digital identification. They typically store multiple payment instruments (e.g., multiple cards or bank accounts) and can be used across everyday contexts. For example, tapping a phone to pay at a supermarket checkout, scanning a QR code to pay for a taxi, purchasing goods online, storing transit passes for metro access, redeeming loyalty rewards at a coffee shop, or using a digital ID to enter a concert venue. Examples of mobile wallets include Apple Pay, Google Pay, Alipay, and Samsung Pay.
- **Standalone payment apps** also support remote and proximity payments and are primarily used for transferring money from person-to-person or person-to-business payments. They serve different and typically more niche use cases than mobile wallets, such as bill splitting, remittances, and gratuities. While they do not have the functionality of digital wallets, they are valued for their simplicity and targeted functionality. Examples of standalone payment apps include PayPal, Venmo (owned by PayPal), CashApp, Bizum, and apps from a local bank.
- **Embedded payments** facilitate remote payments by integrating payment processing technology into websites or apps' checkout experience. They are designed to reduce friction when making a

payment and speed up transactions, avoiding the user having to fill out payment information repeatedly. Thus, they help increase conversion (the percentage of website or app visitors that complete a purchase) by making payments more seamless during checkout. Examples of embedded payments integrated within checkout experiences include Amazon Pay, Meta Pay, PayPal, and Alipay.

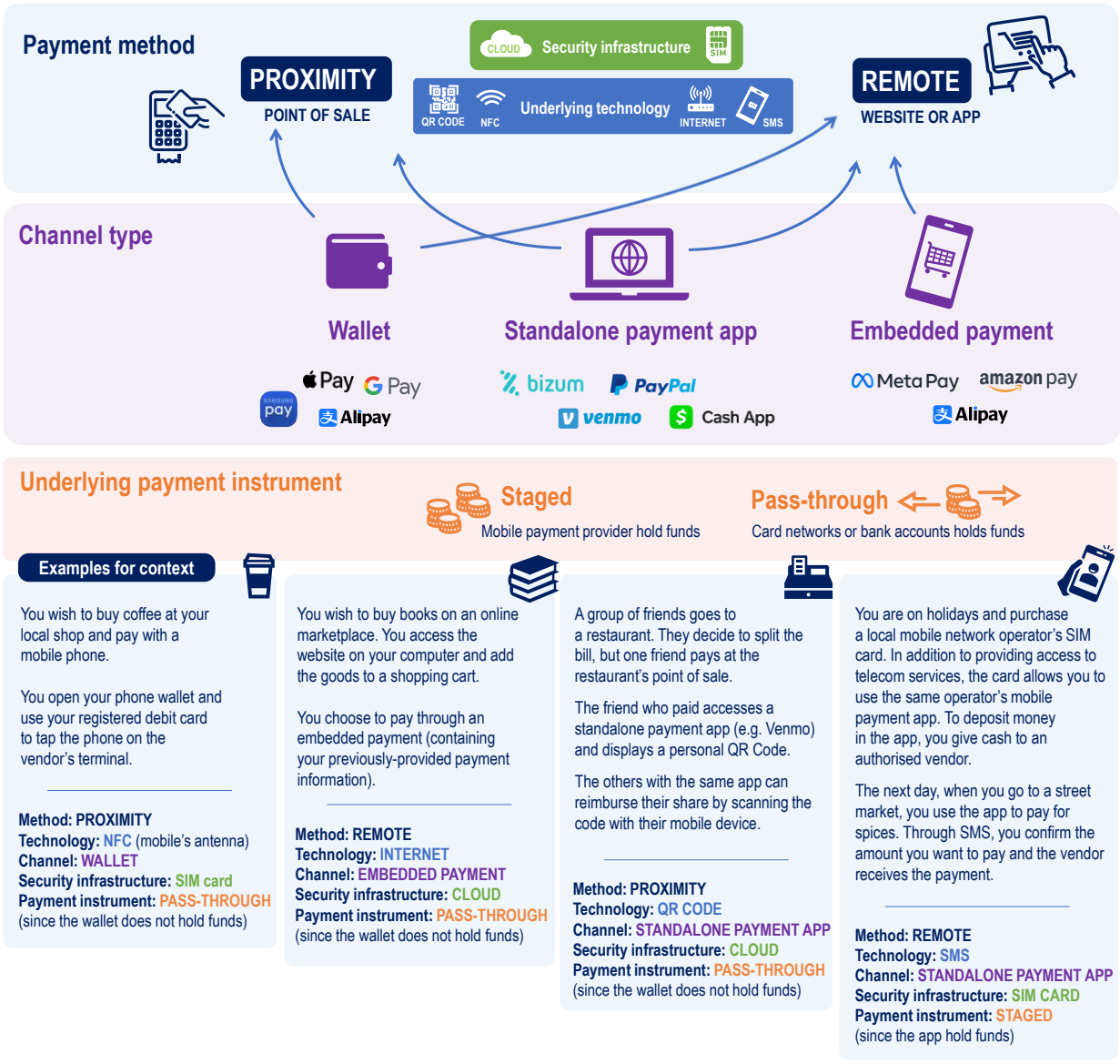
14. Mobile payments can be staged or pass-through, depending on the underlying payment instrument. For example, pass-through mobile wallets are apps that store various payment instruments, including credit and debit cards and bank account information, but do not hold funds themselves.[4] In other words, card or bank account information is passed through and used directly during the transaction. Staged digital wallets allow a user to add funds to the digital wallet, for example, by using cash at a select authorised merchant or retail store, and then use those funds to pay.[5] In other words, the user must add funds to the wallet before being able to make a payment. The regulatory implications for these different types of payments are discussed in Section 2.3.

15. Mobile payments rely on a combination of core technologies that enable secure, seamless, and real-time transactions across different environments. These technologies underpin both the functionality of the user's device and the technological infrastructure that supports payment processing.

- A mobile device's operating system (OS) provides the foundational software that enables all applications to run and manage interactions between the device's hardware and software. It handles the processing of apps, including those used for mobile payments, and is typically pre-installed by the device manufacturer.
- Application programming interfaces (APIs) are also essential to mobile payments. These are sets of protocols that allow different software systems to communicate. APIs enable mobile payment apps to interact with the device's OS, hardware components like biometric sensors, and stored data. They facilitate key functions such as authentication, access to stored payment credentials, and communication with payment processors.[6]
- Secure storage infrastructures are required to protect sensitive financial information exchanged during a mobile payment. These can include encrypted elements embedded in the mobile device, such as chips or SIM cards with built-in secure elements or accessed through remote secure servers hosted in the cloud. These systems store payment credentials, authentication tokens, and transaction data to ensure the integrity and confidentiality of mobile payments.[7]
- Internet access or mobile telecommunication network connectivity is critical for remote payments, such as online purchases or person-to-person transfers.
    - In many jurisdictions with limited internet penetration, mobile network operators (MNOs) enable mobile payments through their telecommunications network via text messaging technologies such as SMS and USSD, allowing transactions to be conducted without a smartphone or internet connection.
- Different contactless technologies enable proximity payments at physical points of sale. The most widely adopted technologies are:[8]
    - Near-Field-Communication (NFC), which enables "tap to pay" transactions by allowing close-range wireless communication between a mobile device and a merchant's point-of-sale (POS) terminal. Payment information is exchanged via a secure NFC antenna and follows the NFC wireless protocol.
    - QR code-based systems facilitate "scan to pay" payments by scanning a barcode with the mobile device's camera. This initiates the transaction and redirects the user to a payment app or webpage, enabling rapid payment authorisation without requiring additional hardware integration.

16. Together, these technologies support the provision of mobile payments across different geographies, devices, and transaction types.

Figure 1. Examples of types of mobile payments, channels, and underlying technology



Source: OECD.

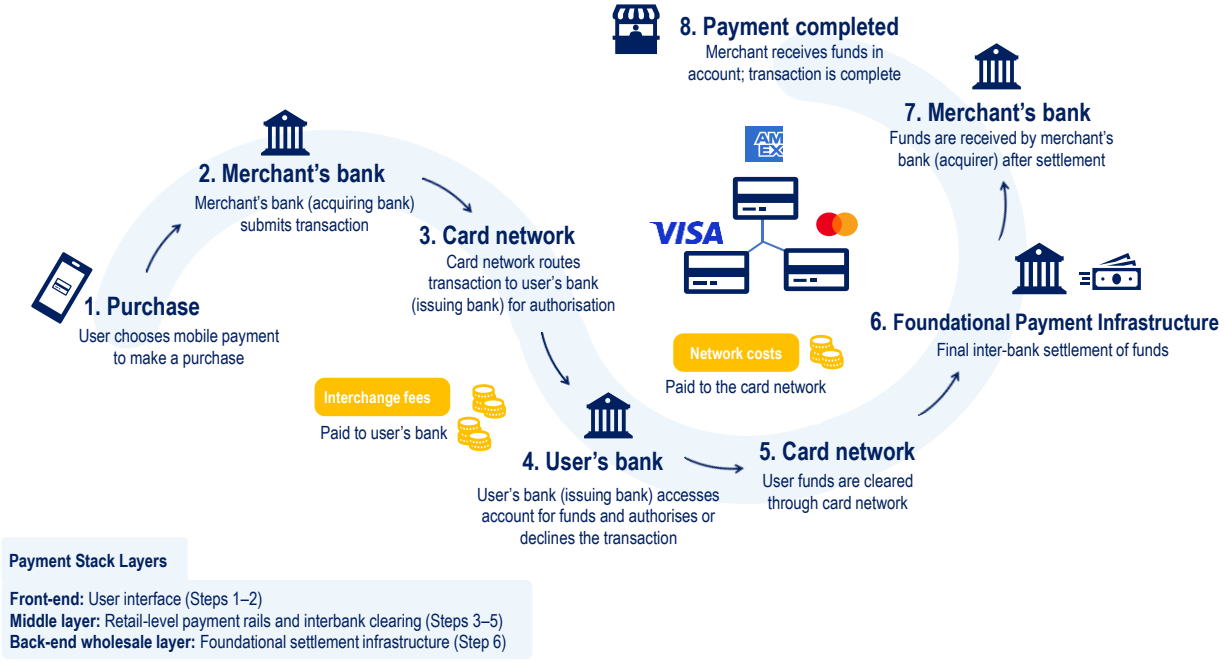
1.2 Payments sector infrastructure

17. Banks and card networks often own or control the middle layer of the payment infrastructure that enables mobile and other retail payment services. In the same way that train tracks determine the route a freight train follows to deliver goods, retail-level payment rails define how payment instructions flow. However, the actual movement of funds occurs through the foundational wholesale settlement infrastructure, such as RTGS or ACH systems, which function like freight trains, carrying value between banks. This remains the most prolific way to effectuate mobile payments across most jurisdictions.

18. Traditional payment providers (banks and card networks) developed and scaled retail-level payment rails, as part of a bank-centric model, long before the advent of mobile payments. This model remains central to the processing, clearing, and settlement of most mobile and broader retail payment transactions.[9] The bank-centric model (also known as the four-party scheme) includes users and their banks (called issuers), and merchants and their banks (called acquirers). Issuers and acquirers are part of a network that sets the rules and procedures for routing, authorising, clearing and settling payments among its members. Typically, card network providers determine the processing rules and fee structures (OECD, 2022[8]). While banks generally serve as issuers and acquirers, card networks facilitate the flow of payment instructions and manage the clearing process. Final settlement occurs through foundational wholesale settlement infrastructure, often overseen by central banks.[10]

19. Traditional payment providers control the retail-level rails that facilitate payment processing in this model. A value to providing payment services is revenue from payment transaction fees, tightening relationships with users for value-added services, and accessing user data. Interchange fees typically represent the bulk of the costs involved in a transaction.[11] This amount is generally given to the issuing bank because it undertakes the most significant risk by extending credit or banking services to the payer. The card network providers collect additional fees, including various fees, from those related to authorisation to cross-border transaction fees. Together, these fees make up the network costs. These vary depending on the payment instrument, transaction location, channel (in-person or online), and type of merchant (OECD, 2020[4]). Mobile payment providers may or may not impose additional fees when mobile payments are offered as part of a pass-through and collaborative bank-centric model.[12] Figure 2 visually represents an example of the bank-centric model for mobile payments and its retail-level payment rails.

Figure 2. Representation of a bank-centric model and retail-level payment rail



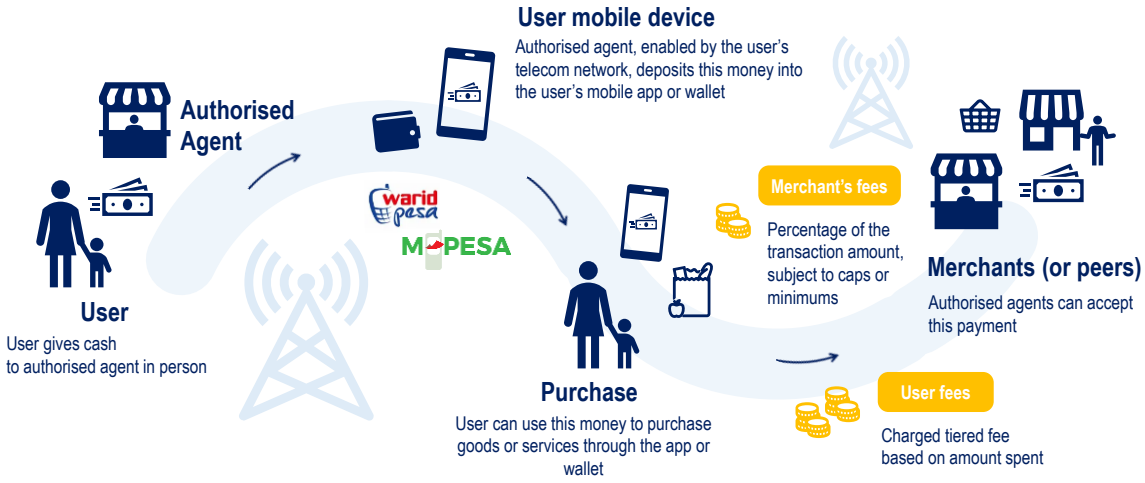
Source: OECD

20. Due to most mobile payment providers' dependence on these retail-level payment rails, traditional providers have largely preserved their structural advantages and market positions despite newer entry and the rapid growth of mobile payment services. In other words, banks and card networks often serve as the

default middle layer providers processing transactions on behalf of newer entrants. Their incumbency is reinforced by long-standing customer relationships, proprietary data, economies of scale and scope, and—in many jurisdictions—regulatory barriers that limit or delay the entry of non-bank competitors, further discussed in Sections 2.1.2 and 2.3. As a result, despite BigTech and FinTech's entry into mobile payments, traditional providers hold persistent market power.[13] They may also pose structural barriers to competition in mobile payment services across jurisdictions where alternative retail-level payment rails have not been developed or widely adopted. Understanding this traditional architecture and the incumbent's control of retail-level payment rails is critical to identifying mobile payment challengers' constraints and assessing where pro-competitive interventions may be most effective.

21. There are few genuinely independent mobile payment providers. A key reason for the limited number of independent mobile payment providers that rely on alternative retail-level rails is that developing payment processing rails, like building a new railroad, is costly.[14] Even where new entrants have built autonomous processing infrastructures, as addressed in Box 1 below, users often still rely on banks or payment cards to move money in and out of the mobile payment network (AdC, 2021[9]) (European Commission, 2024[10]). The exception happens in jurisdictions where mobile payment services leapfrogged the need for banks and card networks by establishing an autonomous network of authorised agents to collect funds on behalf of the mobile payment provider. In these instances, the independent service model for mobile payments allows providers to operate based on different fee structures without relying on the retail-level rails established by traditional payment providers.[15] Figure 3 visually represents an example of the independent model for mobile payments and its retail-level payment rails.

Figure 3. Representation of an independent non-bank-centric retail-level payment rail



Source: OECD

1.3 Mobile payment providers and service models

22. In addition to traditional payment providers (banks and card networks) who provide mobile payment services via proprietary apps, wallets, or in collaboration with new entrants, a diverse set of new players—FinTechs, BigTechs (including device manufacturers and operating system (OS) providers), and MNOs—have emerged as providers of mobile payment services.

23. As discussed in Section 1.2, despite this broadening of participants, banks and card networks remain structurally central, often setting the terms for market entry and shaping the underlying conditions of competition throughout many jurisdictions. Newer entrants into mobile payment services operate with

varying levels of independence from incumbent banks and card networks, leveraging different technological, regulatory, and commercial service models. Their strategies are shaped by their core business offerings, user bases, and access to critical infrastructures and data. As a result, across most jurisdictions, the mobile payments landscape has become increasingly layered, where collaboration, dependency, and competition co-exist. In turn, where independent mobile payment providers have emerged, often this has led to monopoly or oligopoly by the alternative payment providers, reinforcing market power in adjacent businesses. For example, MNOs' entry into mobile payments in certain jurisdictions has substituted reliance on traditional payment providers, often tipping payment markets and reinforcing their dominance in adjacent telecommunications markets. Both outcomes raise questions for enforcement and regulatory design, as discussed in Sections 2 and 3.

24. FinTech refers to newer entrants in the financial sector that offer financial technology (OECD, 2024[5]). The entry of FinTech firms has introduced new business models for mobile payments and consumer-facing innovations. FinTechs typically operate as more agile and leaner businesses bearing lower fixed costs, enabled by state-of-the-art technologies. Instead of being constrained by rigid legacy systems, FinTechs can swiftly respond to changing consumer preferences (OECD, 2020[4]). As a result, they may pose competitive constraints to traditional payment providers, particularly in niche or adjacent segments to mobile payments.

25. Notwithstanding, mobile payment FinTechs frequently rely on partnering with traditional payment providers to access the market due to licensing requirements and regulations or when faced with difficulties in increasing customer reach and scale. Thus, FinTech's offerings generally depend on or complement traditional mobile payment providers' offerings. While most FinTechs operate pass-through mobile payment services, some have secured the relevant licenses or authorisations to offer staged mobile payment offerings, discussed in more detail in Section 2.3. Where FinTech providers offer staged payment services, money can be added without using a bank account or payment card. This is done by adding cash to the relevant account through a select retail store, which acts as an authorised agent. However, despite the optionality of adding money without reliance on traditional payment providers, money usually goes in and out of the network through bank accounts or card networks (Worldpay, 2025[7]).

26. BigTech refers to platform-based large technology companies with extensive customer networks and conglomerate business models across multiple markets (OECD, 2020[4]). In mobile payments, they occupy a distinct but still developing position. Their exact role in mobile payments varies significantly across jurisdictions. Some BigTech firms have previously explored bypassing traditional payment providers entirely by developing independent payment infrastructure. The most prominent example is Meta's (formerly known as Facebook) proposed Diem (formerly known as Libra) project, which combined a blockchain-based settlement layer with a stablecoin, creating a fully integrated and independent closed-loop payment system. The project ultimately failed due to regulatory considerations (Commitee on Payments and Market Infrastructures, 2019[11]).[16] Generally, as of today, however, their offerings often complement, rather than replace, traditional payment providers' services. Indeed, the vast majority rely on banks and card networks to process payments and offer pass-through mobile payment services. Unlike FinTechs, which typically depend on traditional payment providers for scale, BigTech firms leverage their entrenched presence in adjacent digital markets and unparalleled access to data to enter and expand into mobile payment services.

27. Due to BigTech mobile payment providers' multiple competitive advantages, they pose the potential for disruptions and future competitive constraints on traditional payment providers. Beyond their overall financial wherewithal, BigTech providers have a large user base associated with their core business, whether mobile device hardware, operating systems, search engines, e-commerce marketplaces, or social networks. Thus, when launching a mobile payment service, BigTech providers count on a significant volume of user adoption as part of their ecosystem offerings. Multiproduct

ecosystems (ecosystems) refer to groups of complementary or interrelated products and services that form a bundle that final consumers can consume.

28. Generally, BigTech providers' access to user data through their core businesses and related offerings enables the deduction of user behaviour and facilitates the provision of mobile payment services. As a result, BigTech providers possess a unique competitive advantage due to their access to user data collected through non-payment activities in their ecosystem. BigTech providers also have unique incentives to provide mobile payment services, as many activities within their ecosystems (e.g., e-commerce) benefit from the ability to realise payments. In turn, mobile payments generate more data, thus adding to a platform's value and growth (Brunnermeier, James and Landau, 2019[12]). By integrating mobile payment solutions into their platform ecosystems, BigTech providers can create a mobile payment service that is hard for their potential competitors to replicate.

29. Separately, MNOs have played a foundational role in enabling mobile payments in certain jurisdictions where banking infrastructure was underdeveloped. MNOs built autonomous infrastructures independent of banks or card networks' retail-level payment rails. This independence was made possible through their control over mobile telecommunication networks, direct access to users, and extensive retail agent networks as part of their telecommunication offerings. In other words, mobile telecommunication users who also opt to rely on an MNO's mobile payment service can add funds directly to their account through authorised agents. In this way, the authorised agent replaces the need for a bank account or card to move money in and out of the mobile payment network. The latter enabled the creation of alternative retail-level rails through a network of authorised agents to collect funds on behalf of the mobile payment provider. Their significant presence in telecommunications allowed MNOs to reach unbanked populations with access to mobile devices and deliver payment services at scale in markets with low levels of financial inclusion.

30. Like BigTech providers, MNOs also benefit from a large user base associated with their adjacent offerings, allowing for reduced customer acquisition costs. This structural advantage has allowed MNOs to act as independent mobile payment providers, developing alternative retail-level payment rails independent of the traditional payments sector. For text-message-based mobile payments, MNOs, like mobile device hardware or operating systems providers, may also benefit from control over essential technology infrastructures, such as SIM cards or unstructured supplementary service data (USSD).

31. Box 1 discusses examples of the differing mobile payment service models and their adoption across certain jurisdictions.

Box 1. Examples of mobile payment service models and adoption

Mobile payment service models and technology adoption vary across the world. Twenty years ago, the first wave of mobile payments was launched predominantly based on a "mobile money" MNO-centric model, where an MNO holds the user's funds and transfers are made via text message. In other words, allowing users to send money using text messages on a wireless telecommunications network without requiring internet access or a high-end mobile device to effectuate a payment. Importantly, as the MNO holds the funds in this model, which is generally enabled by collecting funds via authorised agents, a bank account is not required to transfer money. This form of mobile payment substitutes the need for bank accounts and related card networks, promoting social inclusion. As a result, the adoption of mobile payments globally followed a different path than most other technological developments, with quicker initial uptake in some developing countries.

A key example is Kenya's M-PESA, text-messaging-based mobile payment, introduced by Safaricom, a Vodafone subsidiary, in 2007. Since the launch of M-PESA, Kenya has been one of the leading mobile payment economies in the world and is considered a success story in mobile payment adoption, fostering

financial inclusion by leapfrogging the need for a bank account. The Central Bank of Kenya (CBK), in co-operation with the Competition Authority of Kenya (CAK) and other stakeholders, enabled this success by implementing the first National Payments Strategy (NPS) in 2004-2008. By 2014, 97% of households used the M-PESA service. Four in five Kenyans used M-PESA mobile payments in 2019. However, Safaricom's continued entrenched dominance via M-PESA in mobile payment services has given rise to competition concerns, resulting in multiple initiatives to promote competition, including continued and periodic NPS updates. This is discussed further in Boxes 3 and 7.

As technology evolved, including the proliferation of access to high-speed internet on mobile devices, alternatives to text-messaging-based mobile payment services became available and adopted across jurisdictions. This included the increased use of apps and wallets, which flourished, fueled by the entry of FinTech and BigTech into mobile payment services. Two types of mobile payments operated by BigTech can be distinguished. In some jurisdictions, BigTech built its own payment processing and settlement infrastructure as part of a "super app" ecosystem, to an extent disintermediating the need for traditional payment providers through staged mobile payment offerings that hold the funds in an independent closed-loop system.

People's Republic of China (hereafter 'China') is the global leader in digital wallet adoption, serving as the primary example of the effect of BigTech entry on mobile payments. In 2004, Alibaba, the leading e-commerce platform, launched the mobile payment app Alipay. Its launch and swift adoption took advantage of the unmet demand for mobile payments, the low penetration of non-cash payment means, and the evolution of mobile devices and their adoption. Its core e-commerce businesses' prominent role and rapid adoption of QR codes at POS contributed to Alipay's current incumbency in mobile payments. In turn, WeChat incorporated WeChat Pay into its leading social networking platform in 2013. By 2019, WeChat Pay and Alipay accounted for 94% of the Chinese mobile payments market. UnionPay, China's state-run credit and debit card network, launched a competing mobile payment offering in 2017. In 2019, PayPal also entered the Chinese market by acquiring GoPay, which enabled PayPal to enter the market through a payment license. However, despite some entry into the market, as of 2024, Alipay and WeChat Pay were estimated to hold around 54% and 42% of the mobile payments market share in China. The State Administration for Market Regulation (SAMR) and the Banking and Insurance Regulatory Commission (CBIRC), along with other regulators, have been working together on measures to limit the competition and prudential risks associated with the dominance of BigTech mobile payment providers. These initiatives are addressed in Box 3.

In contrast, in jurisdictions with previous high penetration by traditional payment providers (i.e., where most customers had access to bank accounts and related card payment services), such as the European Union (EU), the United Kingdom (UK), Australia, and the United States (US), among many others, mobile payments emerged later and remain predominantly linked with pre-existing bank accounts and card payment services through pass-through mobile payment offerings. Indeed, outside of China, there are limited examples of new entrants building an autonomous infrastructure. Despite the increasing adoption of mobile wallets, apps, and embedded payments, the underlying payment instrument remains payment cards or bank accounts. In these jurisdictions, mobile payments complement rather than substitute the traditional payment providers. For this reason, this service model is referred to as "collaborative" or "bank-centric" as opposed to "independent." As such, traditional payment providers continue to hold a strong position across many jurisdictions despite FinTech and BigTech entry.

Moreover, while various technologies, including QR codes, facilitate the provision of mobile payments, NFC technology has been adopted as the core technological infrastructure for proximity payments in most jurisdictions with previous high penetration by banks and card networks. NFC payments rely on the same technology infrastructure as contactless payment cards based on the EMV standard developed by Europay, Mastercard, and Visa (providing the standard its name, EMV). In other words, where card payments were already common, NFC technology has been widely adopted and is considered a key input.

Note: Alipay and WeChat Pay operate independent closed-loop internal settlement systems for transactions that remain within their platforms. However, when users transfer funds between digital wallets and bank accounts, these platforms rely on the foundational payment infrastructures, such as RTGS or ACH systems, to execute interbank settlement. Users typically fund their Alipay or WeChat Pay apps or wallets by linking a bank account or debit card, initiating a transfer from the formal banking system, controlled by traditional payment providers, into the platform. This process relies on foundational interbank settlement infrastructure, such as RTGS, and the retail-payment rails of traditional payment providers, to move funds into the wallet provider's custodial bank account. Once inside the platform, subsequent transactions can occur entirely within the independent closed-loop system.
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1.4 Opportunities for competition and innovation

32. Widely adopted consumer technologies such as mobile phones have provided new avenues for alternative providers to enter and compete in mobile payment services. This means that, for the first time, there is a possibility that innovation in retail payments may be driven not by banks or card networks, but by alternative payment providers (Bech and Boar, 2018[13]). This could provide a new impetus for innovation and growth in a sector where there have been previous concerns about the pace of innovation, since retail-level payment rails have been owned or controlled by banks and card networks. Indeed, due to anticompetitive practices and limited competition, the payments sector has long been a concern for competition authorities and regulators (OECD, 2012[14]).

33. New entry, diverse business models, and mobile payment innovation, including the development of alternative retail-level payment rails, represent a significant opportunity to catalyse broader competition across retail payments. Alternative retail-level payment rails in mobile payments can broaden participation, intensify competition, and challenge incumbent business models. This can mean lowering entry barriers, acquiring fees, and faster settlements for merchants. For consumers, it may mean more choice, lower costs, greater convenience, and services tailored to specific needs. Moreover, competition in mobile payments may also deliver additional benefits, such as improving the accessibility of payment systems and promoting financial inclusion.

34. As discussed in Sections 2 and 3, by reducing barriers to entry or expansion, keeping markets contestable, and enabling the leveraging of alternative retail-level payment rails, competition authorities in co-operation with regulators may help unlock opportunities for mobile payment providers to bypass traditional retail-level payment rails long dominated by banks and card networks. Increased competition, including decoupling from these legacy rails, may enable new entrants to compete on cost and quality (e.g., security, speed, functionality, and convenience), more broadly spurring competitive pressure on incumbents. In parallel, competition may also emerge "for the market," where new technologies — including stablecoins, crypto asset-based payment systems, and BigTech-led solutions such as Libra/Diem — propose entirely new payment architectures that could bypass both traditional retail and wholesale infrastructures. While these models raise complex regulatory and policy issues, particularly in the context of cross-border

payments, they represent a distinct source of competitive pressure that may be increasingly relevant to payment system evolution. These developments are not the focus of this paper, which concentrates on mobile payment services and related competition issues, but they are acknowledged here as an adjacent and emerging potential source of disruption. In other words, competition in mobile payments presents an opportunity for systemic change, triggering a cycle of competitive responses that enhance payment efficiency and innovation across the broader retail payment sector.[17]

35. Mobile payment innovation holds the potential to surpass the pro-competitive gains observed in earlier generations of payment systems. At its core, innovation in mobile payments refers to developing and deploying new technologies, business models, or service offerings that reduce costs and improve quality. Innovation can be incremental —improving existing processes— or disruptive —redefining the nature of the payment value chain, such as the retail-level rails on which payments are processed, and who takes part in it. A competitive mobile payment sector may create the conditions for such disruptive innovation by allowing new entrants, including FinTechs and BigTech firms, to challenge traditional payment providers and improve existing payment processing models.[18]

36. Mobile payments have the potential to circumvent some of the limitations of traditional payment systems, such as high fees imposed on merchants, anti-steering provisions, and reliance on physical infrastructures. In this context, mobile payments may represent more than a shift in payment modality, as they have the potential to reflect a broader reconfiguration of the financial services value chain. Thus, by unbundling payment functions from traditional payment providers and enabling competition, mobile payments can reshape market structure, foster dynamic entry, and realign incentives toward consumer welfare (Linnemann Bech and Hancock, 2020[15]). Mobile payments also represent another step in the progressive unbundling of traditional banking services, making at least some of them contestable. Where once services such as payments were bundled into the broader offering of a full-service bank, today specialised providers can enter and compete over discrete parts of the value chain, such as mobile payments. This unbundling can stimulate innovation, as nimble entrants target specific services with better technology and lower costs. It also poses important enforcement and regulatory challenges, as competition authorities and regulators may need to ensure that entry barriers are addressed and that incumbents do not leverage their remaining advantages to entrench their positions.

37. Experiences across certain jurisdictions underscore how competition can drive innovation and reduce costs. Particularly, the unbundling of payment processing from card issuance has begun to erode the pricing power of dominant card networks and incumbent banks. In countries where market contestability has improved, consumers have benefited from better access to payment options, and small merchants previously excluded due to high fees or lack of infrastructure have been enabled to use this technology. For example, as discussed in Section 3.3, public retail-level payment rails have promoted competition and interoperability between payment platforms, reduced user and merchant costs, and promoted financial inclusion (Duarte et al., 2022[16]). These gains resulted from competitive pressure, enabled by competition enforcement, pro-competitive regulation, and technological progress. Mobile payments represent a potentially more competitive future, delivering broader and deeper benefits by enabling competition that constrains the incumbent payment providers.

2 Competition risks

38. As discussed in Section 1.4, realising the potential of mobile payments of increasing social benefits through competition will depend on keeping mobile payment markets contestable over time. The very features that may support early innovation —network effects, data synergies, and user integration— can, over time, entrench market power and raise barriers to entry and expansion. As the sector matures and newer competition risks develop, active oversight and timely competition enforcement will be essential to avoid tipping effects, preserve openness, and ensure that mobile payments remain a space where new providers can emerge, innovate, and challenge incumbents. This includes safeguarding access to key technological and financial infrastructures and scrutinising potential exclusionary practices that may stifle competition, lock-in users, or limit, steer, and co-opt innovation. This section does not aim to be exhaustive. However, it highlights certain emerging issues and potential conduct that could adversely affect competition in mobile payment services. These competition risks are worthy of ongoing monitoring by competition authorities and regulators to ensure that the full benefits of this innovation materialise for consumers and merchants.

2.1 Structural Risks - Barriers to entry and expansion

2.1.1 Characteristics of mobile payments and the role of data asymmetries

39. Like other digital markets, mobile payments present a confluence of several characteristics, not necessarily individually unique, but that, when encountered together, may increase barriers to entry and expansion and lead to a degree of failure of the natural competitive process to deliver competitive outcomes (OECD, 2024[5]). For this reason, Section 3 of this paper discusses pro-competitive regulation as a potential complement to competition enforcement, enabling an open and fair playing field for competition in mobile payments.

40. All mobile payments are multisided markets and rely on a payment platform's interaction between distinct user groups, mainly merchants and customers (Rochet and Tirole, 2003[17]); (OECD, 2021[18]). New entrants in mobile payments face a chicken-and-egg dilemma: customers' adoption of a mobile payment service depends on merchants' adoption of the same, and vice versa. In other words, the influence of strong network effects, where the value offered to the individual user increases the greater the number of users (Eisenmann, Parker and Van Alstyne, 2006[19]) (Israel Competition Authority, 2021[20]).[19] Scale and scope economies are also present in mobile payments, where a payment provider platform benefits by adding more users and expanding into features that complement those the platform already offers. This enables the platform's incremental expenses to be spread more widely as its user base and array of features expand. This may lead to conglomerate business models, such as ecosystems of interrelated applications (ACM, 2020[21]).

41. Moreover, switching costs, which inhibit users from migrating to another mobile payment provider, may also be present in some instances. Switching costs and network effects may be exacerbated when complementary products are associated, such as mobile devices and their OS and mobile apps or wallets, potentially creating user lock-in within a provider's ecosystem (Edlin and Harris, 2013[22]). Merchants may incur switching costs through homing expenses, which refer to the costs of adopting and maintaining the

technical capability to accept a given form of payment, including acquiring compatible point-of-sale (POS) terminals, integrating payment software, training staff, or entering commercial agreements with payment providers. These expenses are incurred regardless of whether the merchant uses a single provider (single homing) or accepts multiple systems (multi-homing), and they can discourage experimentation with or adoption of alternative payment solutions.

42. Data plays a central role in mobile payment markets, particularly as they increasingly intersect with the broader data economy. The ability to collect, process, and monetise user data is a core source of competitive advantage, not only in providing mobile payments but also in enabling adjacent data-driven services. Financial services have always been data intensive. Banks have historically had privileged access to user data, which has entrenched their dominance across offerings. For example, by enabling the use of transaction and account data to assess credit risk or cross-sell financial products. However, the entry of FinTechs, and especially BigTech firms, is reshaping how and what data is leveraged. FinTechs and BigTechs may also use data more efficiently than traditional payment providers. Traditional payment providers may be encumbered by legacy IT systems and regulatory constraints (e.g., privacy, anti-fraud, and anti-money laundering rules), which may limit their ability to extract value from data sources to the same extent as BigTech and FinTech providers. FinTechs often rely on innovative data analytics and partnerships with traditional payment providers to enhance user targeting. BigTechs, in contrast, bring an entirely different scale and scope to data collection, integrating behavioural, social, and transactional data drawn from across their digital ecosystems. Indeed, in some jurisdictions, and as markets evolve, banks have sought to match social networking data, including through partnerships with BigTech companies, with banking data to understand their clients better (Gambacorta et al., 2020[23]). This underscores the unparalleled competitive advantage BigTechs may have through their collection and use of data (Coeuré, 2025[24]). Section 3.1 describes potential competition opportunities to address this data advantage, with a view to the potential evolution of market dynamics in mobile payments.

43. Data also plays a pivotal role in improving the speed and accuracy of payment transactions and thus enables increasing returns to scale (AdC, 2021[9]). For example, on the one hand, data can help identify and mitigate fraud. On the other hand, access to data may also enable additional risks, including those related to data privacy and security. The systematic accumulation of user data and new ways of analysing them, including artificial intelligence and machine learning solutions, exacerbate the pivotal role of data as a potential competitive advantage in the provision of mobile payments. These returns to scale may be observed both “within the market” —for example, by improving payment processing— and “outside the market,” where data from payments can be leveraged to benefit other lines of business such as credit, insurance, asset management for financial services operators or e-commerce and messaging systems for BigTech ecosystems. Data generates increasing returns to scale: collecting more data generates more substantial network effects, which leads to more payment activity and, in turn, more data. This has been termed the “data-network-activities” loop (Doerr, Frost and Gambacorta, 2023[25]).

44. Together, these characteristics may create uncommonly high entry barriers, establishing formidable obstacles for rivals to overcome and militating toward winner-take-all markets (OECD, 2021[26]). A winner-takes-all dynamic occurs when markets are prone to tipping and become highly concentrated around a single or a few dominant platforms. As a result, first-mover firms offering an attractive product rise to a position of dominance by tipping the market. In turn, these entry barriers discourage and often prevent potential competitors from entering the market or displacing a dominant firm. The market thus tends to a single or a few dominant players.

45. In mobile payments, where vertical integration and conglomerate effects are observed, this winner-take-all dynamic may also give rise to a high concentration in other markets. Supply and demand synergies facilitate entry across markets and entrench an ecosystem's dominance across markets through flywheel effects (enabled by the characteristics of digital markets, such as network effects), mutually reinforcing dominance and its effects across markets (OECD, 2021[27]). In addition, once a market has tipped, the

dominant player may gain a "gatekeeper" status, with the power to dictate the terms of access to its digital spaces for other firms, including access to key technology infrastructures, amplifying barriers to entry for potential competitors.[20]

46. For example, as BigTechs often already have captive users engaged with their ecosystem offerings, this may lead to high switching costs, generating lock-in for customers. In turn, payments ensure additional engagement within the ecosystem (OECD, 2020[4]). For those BigTech providers offering mobile device hardware or operating systems, this may also open the opportunity to control who might access the relevant technology infrastructure and compete in mobile payments or pre-install certain mobile payment apps or wallets as defaults, which may restrict competition. MNOs, like BigTech mobile device hardware or operating systems providers, may also benefit from control over essential technology infrastructures for text-message-based mobile payments.[21] This control may raise barriers to entry and impact competition, as discussed further in Section 2.1.3 (Donovan, 2012[28]). Moreover, experiences across jurisdictions underscore that dominance in mobile payment services may be mutually reinforcing, entrenching dominance in telecommunication services and vice versa.

47. Considering the characteristics observed in mobile payment services, in addition to the potential adoption of pro-competitive regulations to promote contestability, competition enforcement is essential to protect competition in mobile payment markets and adjacent markets.

2.1.2 Regulation as a potential direct barrier to entry and expansion

48. Regulation, often crafted with prudential, stability, anti-money laundering, fraud prevention, security, or other important policy objectives, may justifiably safeguard entry into mobile payment services through licensing and other entry requirements, such as liquidity and diversification requirements. Moreover, as discussed in Section 3, certain tailored rules and regulatory frameworks have enabled FinTech-driven payment innovation, providing legal clarity, enabling new business models, and supporting the entry and scaling of non-bank providers in retail payments.[22] However, where regulations are not proportionate to the risks posed or fail to account for technological developments and evolving business models, they may pose undue structural barriers to entry. Thus, ensuring the right balance of regulation so that barriers are minimised is key.

49. Complex or overly burdensome licensing regimes may prevent new providers from entering the market or channel them into partnerships with incumbents, limiting the scope of meaningful competition. In some jurisdictions, outdated or overly prescriptive rules may fail to accommodate innovative mobile payment services. These barriers may be particularly detrimental to smaller FinTech firms, whose cost structures and business models differ fundamentally from traditional payment providers, and may increase their dependence on them. At the same time, larger and more established firms — including incumbent payment providers and BigTech companies — may be better equipped to absorb compliance costs or influence the shape of regulatory frameworks to their advantage. As a result, markets may remain concentrated, with mobile payment services offered primarily by (or through co-operation with) traditional payment providers. This counsels for the scrutiny of the potential effects of a regulation with the benefit of multiple experts across government and industry, including independent experts who do not pose conflicts of interest.[23] Box 2 discusses regulatory lessons from Nigeria and Ghana. Additional examples are discussed in Section 2.3.

Box 2. Regulatory lessons from Nigeria and Ghana

Nigeria

Following M-PESA's successful launch in Kenya, the Central Bank of Nigeria (CBN) designed a regulatory framework for mobile payment services in 2009. The regulations aimed to ensure the important goal of structured and orderly development of mobile payment services to promote financial inclusion. In this connection, it issued minimum technical and business requirements, and significantly, as part of the licensing regime, it limited the business models that could be adopted to offer mobile payment services. It authorised (1) banks acting alone or as part of a group of banks to offer mobile payment services and (2) non-banks. However, while it did not define which organisations could qualify for licenses as "non-banks," it expressly excluded mobile network operators, limiting their role to providing telecommunications network infrastructure. The CBN justified this exclusion based on the threat MNOs could pose to the financial system's stability. By 2018, the CBN recognised that mobile payments had failed to become widely adopted. Thus, it revised the regulatory framework and adopted regulatory requirements and conditions for all mobile payment providers, regardless of their background or type of operation. The updates to the regulatory framework instituted in 2021 permit MNOs, through subsidiaries, to register as mobile payment providers. An MNO today can provide mobile payments if it meets the relevant licensing requirements. Nigeria's experience counsels against regulatory frameworks that exclude potential market participants. It also underscores the importance of revising regulations, as needed, based on market developments and assessing ways to achieve policy goals with due regard for the impact on competition.

Ghana

In Ghana, bank-led business models were initially favoured by the 2008 Branchless Banking Guideline, with MNOs excluded from applying for licences unless they partnered with a bank. An impact assessment by the Central Bank in consultation with multiple stakeholders underscored that the regulatory preference for the bank-centric model hindered entry and investment incentives of mobile payment providers, impacting innovation. This led to a recalibration with revised regulations in 2015, which permit independent entry by MNOs. The signal of policy change in the regulatory environment following the publication of the 2015 guidelines stimulated investments and resulted in growth in mobile payment adoption, with accounts and total volume of transactions growing from GHS 3.78 million and GHS 18.0 million in 2012 to GHS 7.17 million and GHS 113.18 million in 2014, respectively.

Source: Ezechukwu (2021), Regulating Innovation for Financial Inclusion: Lessons from Nigeria, Journal of African Law, https://doi.org/10.1017/S0021855321000279; Bank of Ghana (2022), The Evolution of Bank of Ghana Policies on the Ghanaian Payment System, https://www.bog.gov.gh/wp-content/uploads/2022/03/The-Evolution-of-Bank-of-Ghana-Policies-on-the-Ghanaian-Payment-System.pdf.

50. Besides the potential for regulations to inadvertently affect entry and expansion within jurisdictions, regulatory and supervisory frameworks may also pose challenges for the cross-border provision of mobile payment services. Many mobile payment services are only available in certain jurisdictions, and few are available globally (European Commission, 2024[10]). Different licensing regimes may restrict mobile payment providers from providing their services across jurisdictions. In addition, regulatory and supervisory framework fragmentation can exacerbate these risks. Across jurisdictions, divergent licensing, compliance, and data protection rules may prevent mobile payment providers from scaling internationally or offering cross-border services, reinforcing national mobile payment silos.

51. Regulatory inconsistencies may limit the scope for innovation and market entry, particularly in areas like international remittances. While many of these frameworks reflect legitimate policy objectives, the absence of harmonised approaches can result in legal uncertainty, duplicated compliance costs, and

diminished competitive incentives. As such, if left unaddressed, regulatory fragmentation can entrench incumbents, restrict competition, and reduce the potential consumer benefits of mobile payment innovation. Mobile payments present an opportunity to examine whether regulations pose undue entry barriers, entrench incumbents, or whether alternative regulations may achieve the same goals while promoting competition in markets long dominated by incumbent banks and card networks.

2.1.3 Lack of access to or interoperability of key technological infrastructures as a potential indirect barrier to entry and expansion

52. Lack of access to key technological infrastructures and lack of interoperability —for example, limiting communications to or between mobile telecommunication networks, QR codes, or NFC technologies, among other key technologies that enable mobile payments— may pose barriers to entry and expansion. This may limit contestability, the potential for multi-homing, the sharing of network effects, and increasing user lock-in (Israel Competition Authority, 2021[20]). The same may also give rise to behavioural risks as discussed in Section 2.2.1.

53. Interoperability takes many forms. Generally, it refers to the ability of different systems, devices, or software to communicate and exchange data seamlessly. It facilitates the unrestricted sharing and use of data between different systems, ensuring that various technologies can work together effectively. Horizontal interoperability (e.g., interoperable QR codes) among mobile payment providers may promote competition by enabling platforms to communicate and enabling users to multi-home. Vertical interoperability provides access to key infrastructures or functionalities (e.g., NFC and APIs), may enable entry into downstream or related markets, and potentially prevent market power in one market from being leveraged into others (OECD, 2021[84]).

54. Theoretically, ensuring access to key technological infrastructures for mobile payments through interoperability may prevent markets from tipping to monopoly, particularly when instituted early in a technology's lifecycle. However, practical experience with interoperability, particularly in digital markets, remains limited and largely in the early stages. Initial implementation efforts have yielded certain insights, particularly regarding the importance of clearly defined objectives, the risk of unintended consequences, and the need for context-sensitive design. For example, measures introduced primarily for non-competition purposes, like data protection, may not deliver pro-competitive effects unless explicitly tailored to improve market dynamics. However, efforts to implement interoperability as a tool to promote competition should carefully account for its potential implications for user privacy and security while ensuring that such concerns are not overstated or misused by incumbents controlling key infrastructures to resist competitive pressure (ACCC, 2022[29]). Achieving meaningful interoperability often requires agreement on, or implementation of, technical standards, such as messaging protocols, as discussed in Section 3.1.1. Importantly, incumbents may also seek to shape interoperability outcomes by exerting influence over market-based standard-setting processes or lobbying for regulation that aligns with their interests.

55. The appropriate vehicle for advancing interoperability, whether through regulation or competition enforcement, will depend on the specific characteristics of the market in question. There is an extensive body of OECD work exploring the relationship between competition law and regulation, as recently addressed in the discussion on competition enforcement and regulatory alternatives (2021[30]). Mandating interoperability via regulation, particularly if done too early, may have unintended consequences on innovation incentives. However, where key infrastructures are controlled by incumbent mobile payment providers, experiences across jurisdictions underscore that once entrenched, dominant providers may be unlikely to enable access through interoperability without pro-competitive government interventions (Bianchi et al., 2023[31]). Thus, competition enforcement and potentially pro-competitive regulations or interventions may be required, but timing is key.

56. Today, many mobile payment services operate as distinct, siloed systems with proprietary interfaces, users, and merchant networks. The lack of interoperability means funds cannot be easily

transferred across different mobile payment platforms. This fragmentation can, in turn, discourage the adoption of newer or smaller platforms, acting as a barrier to entry and expansion. This fragmentation may be intentional —for example, when a firm prioritises or restricts access to its infrastructure— or non-intentional, where technical incompatibilities, legacy systems, or lack of coordination between providers create de facto barriers. This distinction matters: intentional barriers may warrant competition enforcement, while non-intentional fragmentation may call for regulatory responses.

57. A legacy example of interoperability in financial services comes from automated teller machines (ATMs). Where banks operate closed, proprietary ATM networks, customers can only access ATMs operated by their bank, limiting competition, choice, convenience and access. These siloed systems create inefficiencies and infrastructure duplication, limiting ATMs' utility and posing barriers to entry and expansion. Central banks or financial regulators in certain jurisdictions have mandated ATM interoperability to promote financial inclusion and competition. The evolution of ATM networks in these jurisdictions underscores how this technological innovation initially entrenched the dominance of certain providers but, through interoperability, ultimately facilitated market participation over time. Similarly, mobile payments may play a dual role as essential infrastructure and a catalyst for competition.

58. Box 3 highlights examples of enforcement and policy interventions in mobile payments across jurisdictions that promote horizontal interoperability. Box 4 in Section 2.2.1 addresses examples of vertical interoperability in mobile payments.

Box 3. Examples of enforcement and policy interventions promoting horizontal interoperability

Kenya

Efforts to enhance mobile payment competition by enabling switching and interoperability remain ongoing through co-operation among regulators. As discussed in Box 1, Safaricom, the dominant MNO in Kenya, entered mobile payment services with its M-PESA offering almost two decades ago. Today, Safaricom remains the dominant MNO and mobile payment service provider. As the Competition Authority of Kenya (CAK) underscored in a 2021 market study, Kenya's payments system and the digital financial services ecosystem, which rides primarily on the M-PESA payments system, is highly concentrated. M-PESA accounted for 99% of the market share in mobile money. This scenario, where the market tipped early on, remains a barrier to competition, making it challenging for other payment providers to establish a foothold in mobile payments, with consequences for competition, innovation, and investment. The first interoperability initiative in Kenya came in 2014 when the National Payments System Regulations mandated payment service providers to use systems capable of facilitating interoperability. Initially, customers in Kenya were limited to the MNO network of their mobile service provider to make payments. In 2022, the Central Bank of Kenya announced the successful horizontal interoperability of mobile payment services regardless of which MNO's network a customer relies on. Today, Safaricom via M-PESA holds a 92.3% market share in mobile payment services, decreasing since 2021 following multiple initiatives to promote competition by the Central Bank of Kenya (CBK) and CAK. This change was enabled, amongst other initiatives, by advocacy by the CAK and multiple reviews of the national payment system by the Central Bank of Kenya in collaboration with other government institutions and stakeholders. Notwithstanding, given Safaricom's durable monopoly, the Kenyan government is examining a proposed bill to separate Safaricom services from M-PESA services to improve competition in both markets.

China

Government bodies and industry authorities in China have also promoted interoperability through administrative guidance to increase competition and reduce perceived systemic risks from mobile payment dominance by BigTech providers. The People's Bank of China issued a Fintech Development Plan for 2019–2021, advancing unified technology standards and horizontal interoperability for QR

codes among different apps and merchants. Previously, Alipay and WeChat Pay had independent and incompatible barcode standards for mobile payments through QR codes. Today, interoperable QR codes allow users to make payments regardless of the app, increasing mobile payment choices. WeChat Pay and Alipay completed nationwide interoperability of QR payment codes with each other and UnionPay in late 2021.

The initiatives in China that promote interoperability have been complemented by antitrust enforcement. In 2021, following an investigation of Alibaba based on allegations that the company forces merchants on its website to sign exclusive co-operation agreements, preventing them from selling products on rival platforms, SAMR issued an infringement decision and a record-breaking fine to Alibaba for abuse of dominance in the online retail platform services market. SAMR found that Alibaba carried out an overall strategic plan with effects in related markets, including mobile payments, that further consolidate and enhance Alibaba's market power. The administrative guidance letter to Alibaba with compliance instructions states that it should increase the opening of data and payment applications to promote cross-platform interconnection and interoperability.

Israel

Following the recommendations of the Israel Competition Authority in its 2021 market study concerning person-to-person mobile payment transfer apps, in June 2023, Israel enacted the Regulation of Engagement in Payment Services and Payment Initiation Law. The market study underscored a high concentration in payment services and identified key factors for preserving competition, including users' ability to multi-home by ensuring interoperability and data portability, which are further discussed in section 3.1. The law aims to enhance competition and interoperability in the mobile payments sector. It introduces a comprehensive licensing framework for payment service providers, including provisions to facilitate payment initiation services, similar to the European Union's PSD2, discussed in Box 6. A key objective of the law is to dismantle barriers between payment platforms, promoting seamless transactions across different providers. The law thus requires operators to allow horizontal interoperability, ensuring users can send and receive funds across different services. This approach is akin to the interoperability seen in telecommunications, where any user can call any other number, regardless of the service provider used by the recipient.

Notes: The Competition Authority of Kenya (CAK), in a 2016 market study, found that Safaricom appeared to raise rivals' costs through unfairly high USSD charges, impeding its rivals' ability to compete with M-PESA in the mobile payment market. Moreover, it underscored that where a provider becomes dominant, network effects reinforce and protect its dominance, often impacting adjacent markets. In the case of M-PESA, limiting access to a key input resulted in competitive advantages for the incumbent in the savings and loan markets and telecommunications and mobile payment markets. Based on the CAK's market study and advocacy, Safaricom changed course, improving competitors' access to USSD. In China, competition concerns remain that interoperability is limited to only the most prominent mobile payment providers, given that the interoperability requirements did not specify the design or implementation methods, leaving it to market participants to decide.
Source: CAK (2021), Report on the Competition Authority of Kenya Digital Credit Market Inquiry, http://196.207.23.2:8080/bitstream/handle/123456789/133/Digital_Credit_Market_Inquiry_Report_2021.pdf?sequence=1&isAllowed=y; CBK, National Payment System Regulations (2014), https://www.centralbank.go.ke/wp-content/uploads/2018/12/NPSRegulationsNew2014-1.pdf; CBK (2022), Full interoperability of mobile money operators becomes effective, https://www.centralbank.go.ke/uploads/press_releases/1178640578_Press%20Release%20-%20Full%20Interoperability%20of%20Mobile%20Money%20Operators%20Becomes%20Effective.pdf; Communications Authority Kenya (2025), First Quarter Sector Statistics Report for the financial year 2024/202, https://www.ca.go.ke/increased-smartphone-adoption-and-mobile-money-drive-growth-telecoms-sector-report-shows; CAK (2016), Competition inquiry into USSD service provision in Kenya, http://196.207.23.2:8080/bitstream/handle/123456789/145/USSD%20Service%20Provision%20Market%20Inquiry.pdf?sequence=1&isAllowed=y; Colangelo (2024), Mobile wallets and interoperability: when competition meets financial inclusion, 10.2139/ssrn.5039449; CBK (2023), Launch of the Kenya Quick Response Code Standard to Increase Usage of Digital Payments, https://www.centralbank.go.ke/uploads/press_releases/812141299_Press%20Release%20-%20Launch%20of%20the%20Kenya%20Quick%20Response%20Code%20Standard%20to%20Increase%20Usage%20of%20Digital%20Payments.pdf; Fei (2023), Regulation under administrative guidance: The case of China's forcing interoperability on digital platforms, Computer Law and Security Review, 10.1016/j.clsr.2022.105786; Israel Competition Authority (2021),Market Research: P2P Transfer Apps, https://www.gov.il/BlobFolder/reports/p2pmarketresearch/en/englishsite_Payment%20App%20Research%20-%20Draft%20for%20Public%20Comment%20-%20EN.pdf; Law for the Regulation of Engagement in Payment Services and Payment Initiation, enacted on June 6, 2023.

2.2 Behavioural Risks - Exclusionary practices

59. Generally, the exclusionary practices worthy of monitoring in mobile payment services mirror those of brick-and-mortar markets and have been observed across different mobile payment operators and jurisdictions.[24] However, certain features unique to digital markets, such as network effects, may lead to self-reinforcing (or flywheel ecosystem) effects, creating new dimensions to these practices or amplifying their impact. These effects may arise when payment services are tightly integrated into broader digital ecosystems (e.g., e-commerce platforms or operating systems). Such integration can reinforce market power by locking users into a single provider's ecosystem, raising switching costs, and deterring rival entry. As mobile payment markets evolve, these dynamics may give rise to novel forms of exclusionary conduct or heighten concerns around existing ones. The following section provides examples of such conduct and its potential implications for competition.

2.2.1 Foreclosure or raising rivals' costs

60. Foreclosure occurs when a firm with market power limits or blocks access to a key input necessary for rivals to compete effectively. In mobile payments, this can arise where a firm controls essential technical infrastructure, such as NFC functionality, secure device elements, QR code standards, or access to an operating system, and restricts its availability to competing payment service providers. For example, a dominant mobile operating system or device manufacturer may refuse to allow rival payment providers to access tap-to-pay functionality via NFC while allowing its integrated payment service access. Self-preferencing is discussed further in Section 2.2.2. Similarly, access to QR code standards or secure authentication mechanisms could be restricted in ways that hinder rival entry or degrade user experience.

61. Where such infrastructures are indispensable or difficult to replicate, denying access can effectively exclude competitors from the market, especially if consumers cannot easily multi-home across different services. Foreclosure may be particularly concerning where it prevents or delays new entry, reduces consumer choice, or allows the dominant provider to leverage its position across adjacent markets. In assessing such conduct, competition authorities may consider whether access to the input is essential, whether refusal is objectively justified (e.g. for technical or security reasons), whether the effect restricts competition substantially, or whether it distorts competition on the merits, for example, through the leveraging of market power in adjacent markets as discussed in the next Section.

62. Rather than blocking access outright, a firm with market power may impose conditions or maintain a market structure that increases the costs faced by its competitors, thereby undermining their ability to compete on equal terms. A lack of interoperability in mobile payments may be a mechanism for raising rivals' costs. For example, when incumbent providers restrict API access or fragment authentication processes, they may force rivals to invest in duplicative infrastructure or create workarounds that reduce efficiency and increase user friction.

63. Raising rivals' costs through non-interoperability may be particularly concerning when interoperability is technically feasible, widely demanded by users or merchants, and withheld without legitimate justification. In such cases, the incumbent provider may maintain fragmentation not to improve efficiency or security, but to preserve competitive advantages derived from user lock-in, switching costs, or ecosystem integration. This strategy can make it more costly or less attractive for users and merchants to adopt competing services, shielding the provider from competitive pressure.

64. Unlike outright foreclosure, the exclusionary effect of raising rivals' costs may not immediately bar competitors from the market. However, it can distort the terms of competition over time, particularly when rivals must duplicate infrastructure, face reduced scale economies, or struggle to deliver a comparable user experience. These disadvantages may lead to lower investment, slower innovation, or market exit. As this conduct is not inherently (by object or per se) unlawful, competition authorities must assess whether

the conduct in question is implemented by a provider with significant market power over an input that is difficult or costly to replicate. Moreover, whether (a) there is a credible technical, security, or privacy justification, (b) it significantly increases the operational burdens on rivals, and (c) has the likely effect of weakening competition, rather than merely harming individual competitors, will be relevant to the assessment. Monitoring such conduct is essential, as control over key infrastructure can shape market access, as discussed in Section 2.1.3. Ensuring these infrastructures are not withheld or limited for strategic exclusionary purposes can maintain contestability, encourage innovation, and deliver better outcomes for consumers and merchants.

65. Box 4 addresses enforcement and regulation regarding the foreclosure of key infrastructures and functionalities related to mobile payment services.

Box 4. Examples of enforcement and regulation over access to Apple's NFC and API functionality

In the context of mobile payments, policymakers and antitrust authorities across jurisdictions have expressed concerns flowing from Apple's control of its OS. Apple's control of the OS has allegedly prevented NFC access and related API functionality to competing mobile payment providers, limiting Apple mobile device users' access to NFC-enabled proximity payments exclusively to Apple Pay, Apple's mobile wallet.

Enforcement against Apple in the European Union

In the EU, the European Commission (EC) opened an investigation into Apple's practices regarding Apple Pay in 2020 and preliminarily concluded in 2022 that Apple abused its dominant position by refusing to supply NFC access and related API interoperability functionality on Apple's OS to competing mobile wallet developers while limiting the NFC access to Apple Pay. In 2024, the EC accepted legally binding commitments by Apple applicable in the European Economic Area (EEA) for ten years, which, among other commitments, ensure fair, objective, transparent and non-discriminatory eligibility criteria for free-of-charge NFC access and API functionality for equivalent security and user experience. They enable rival payment providers to enter the market and compete with Apple Pay, providing choice for Apple mobile device users.

Following the access and interoperability commitments, in December 2024, the first alternative to Apple Pay on iPhone was launched by Vipps MobilePay in Norway, with plans to extend the offerings in Denmark, Finland, and Sweden in 2025. Further market entries are announced for 2025. Notably, Apple's commitments are without prejudice to the obligations imposed on gatekeepers under the Digital Markets Act (DMA), discussed in Box 8. Indeed, in March 2025, the EC specified measures that Apple has to take to facilitate interoperability with its iOS operating system. This guidance focused on connectivity features, which are predominantly used for connected devices but might also be useful for the development of innovative mobile payment services.

Asymmetric Regulations for mobile payment technology infrastructures in Germany

Interestingly, before the EC's Apple Pay commitment decision, the German government adopted Section 58a of the German Payment Services Supervisory Act (PSSA), which provides a right to access technical infrastructure that enables mobile payment services at a fair price and on reasonable terms and conditions. While the provision has been nicknamed "Lex Apple Pay," the regulation is not limited to Apple's mobile devices. It applies to a broader range of key mobile device infrastructures, including virtual assistants. The rationale for Section 58a, as detailed in the explanatory memorandum, is to promote technological innovation in payment services to drive competition and economic prosperity. Section 58a (5) also clarifies that the regulation does not affect competition law enforcement. In the same way, competition law enforcement paved the way for PSD2 reforms as addressed in Section 3

and Box 6; the EC's Apple Pay case illustrates how competition enforcement can pave the way for pro-competitive sector-specific regulation, addressed further in Section 3.

Notes: Section 58 PSSA imposes stricter standards than those in other Member States under PSD2, potentially hindering expansion due to regulatory fragmentation. However, it does not override obligations under national competition law and the DMA. Since it also influenced the design of the DMA's similar provision in Article 6(7), the risk of fragmentation is reduced.
The EC's Apple Pay decision also underscores the relevance of market studies and consumer surveys in identifying anticompetitive concerns. The Commission preliminarily identified absence of constraints on Apple's dominance in the secondary market for NFC (in-store) mobile wallets on iOS based on consumer surveys carried out in context of the antitrust investigation, as consumers cannot make an informed choice at the time of the device purchase; do not take into account the availability of mobile wallets when choosing a device; would not adapt their purchasing behaviour for devices in case of exploitation in the wallet market; and would not adapt their purchasing behaviour within reasonable time. The Dutch ACM's study on BigTech in the payment market also informed the EC's Apple Pay investigation into NFC access. Many other jurisdictions (e.g., the United States, Switzerland, and Brazil) have ongoing litigations or investigations concerning Apple's alleged restrictions on key mobile payment infrastructures.
Importantly, multiple competition enforcement actions worldwide against Apple centre on its in-app payment policies within the IoS App store; however, in-app payments are not the subject of this paper, which focuses on mobile payments such as Apple Pay, a distinct payment solution from in-app payments.
Source: European Commission (2024), Case 40.452 Apple - Mobile payments, https://ec.europa.eu/competition/antitrust/cases1/202428/AT_40452_10155330_9978_4.pdf; Vipps MobilePay (2024), Vipps MobilePay launches the world's first alternative to Apple Pay on iPhone, https://vippsmobilepay.com/en/news/2024/12/09/vippsmobilepay-launches-the-worlds-first-alternative-to-apple-pay-on-iphone; Franck and Linardatos (2020), Germany's 'Lex Apple Pay': Payment Services Regulation Overtakes Competition Enforcement, Journal of European Competition Law & Practice, 10.1093/jeclap/lpaa032; European Commission (2020), Commission staff working document impact assessment report accompanying the document Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020SC0363; USDOJ (2024), Justice Department Sues Apple for Monopolizing Smartphone Markets, https://www.justice.gov/archives/opa/pr/justice-department-sues-apple-monopolizing-smartphone-markets; European Commission (2025), Apple 6(7) specifications, https://digital-markets-act.ec.europa.eu/questions-and-answers/interoperability_en.

2.2.2 Tying, bundling, leveraging, self-preferencing

66. Tying and bundling may enable better, cheaper, and more convenient products and services. Despite these benefits, tying and bundling may have exclusionary effects on competition in a separate, otherwise competitive market and protect market power in the tying market. This may enable a payment provider with market power in one market (e.g., e-commerce) to distort competition in a related market (e.g., mobile payments). The key concern is that a mobile payment provider's payment is bundled or tied with other products or services where the same provider holds market power, leading to forced mobile payment adoption.

67. This concern is not limited to digital platforms. In traditional banking, similar effects may arise where access to financial infrastructures or services, such as a bank account, is conditioned on the use of a bank's own mobile wallet or payment service. For example, a bank may require customers to use its proprietary mobile payment app to access instant payments or restrict non-bank payment providers' ability to initiate transactions from customer accounts. Such practices can entrench the incumbent's market power and raise barriers for new or more innovative mobile payment providers, particularly where consumer switching between bank accounts or payment apps is difficult or costly.

68. An example of exclusionary tying and leveraging by a traditional payment provider is the case against SIX Group in Switzerland, a payment processor and infrastructure group owned and operated by a consortium of banks. Between 2005 and 2007, SIX held a dominant position in card payment processing services. During an upgrade to new payment terminals, SIX offered merchants a dynamic currency conversion (DCC) functionality, allowing customers to pay in their home currency. However, it was only made available through payment terminals manufactured by its affiliated company. SIX refused to share the technical information needed for rival terminal manufacturers to enable DCC functionality on their devices. As a result, merchants who wished to offer DCC were effectively tied to using SIX's terminals.

The Swiss Competition Commission (COMCO) found that SIX had unlawfully leveraged its dominance in payment processing to foreclose competition in the payment terminal market, constituting abusive tying, discrimination, and a restriction of technical development (European Competition Network, 2012[32]).

69. The key competition concern is that tying or bundling may lead to forced adoption, reduce effective choice, and distort competition in otherwise contestable mobile payment markets. An effects-based assessment is needed to distinguish beneficial integration from exclusionary conduct, with particular attention to a provider's ability and incentive to restrict access, the absence of consumer choice, and the potential for long-term harm to innovation and market dynamism.

70. While section 2.3 addresses interdependencies between new entrants and incumbents, collaboration in mobile payments is not limited to traditional payment providers and new entrants. In many instances, banks have partnered to launch joint payment solutions.[25] While such collaborations may foster scale, interoperability, and network effects that benefit users, they can also raise potential competition concerns. Partnerships between major banks may risk facilitating collusion, limiting competition in payment services, tying, bundling, leveraging, self-preferencing or foreclosing access to smaller rivals or non-bank payment providers. For instance, cooperation between incumbent banks to develop alternative retail-level payment systems, such as reducing reliance on card networks, may be pro-competitive by enhancing independence and lowering fees. However, it could also raise concerns if it leads to exclusionary practices or market foreclosure. Ensuring that governance structures, data sharing arrangements, and access terms remain pro-competitive, as addressed in section 3, is critical to mitigating these risks and preserving contestability in mobile payment markets.

71. Relatedly, preferential treatment may occur where a mobile platform provider with market power in adjacent markets leverages that position to preference its mobile payment service. Where mobile payment service providers own key infrastructure, a similar risk is that their mobile payment services are pre-installed. This may protect and strengthen the market power of the mobile ecosystem, with effects on mobile payment markets and adjacent markets, such as the OS or hardware. Given that mobile payments are offered and consumed with other products or services and that ecosystems are common in the provision of mobile payments, these practices may become a source of increased concern, due to the potential for anticompetitive self-reinforcing flywheel effects through an entire ecosystem spanning multiple markets. For example, in the Apple Pay case by the EC, as discussed in Box 4, a key concern underscored was that Apple may have restricted competition while self-preferencing its mobile payment service, Apple Pay, by leveraging its dominance over key technology infrastructure.[26]

2.2.3 Most favoured nation clauses and anti-steering provisions

72. A type of vertical restraint that may pose competition risks in mobile payments is the most favoured nation (MFN) restraint. MFN clauses may be instituted by price relationship agreements that guarantee that a merchant treats a mobile payment service as its favoured customer, ensuring the best terms and price conditions for that mobile payment service.[27] MFN clauses may thus restrict how a merchant will deal with alternative mobile payment providers. As such, these may have exclusionary and collusive effects and negatively impact price competition by limiting the merchant's incentives to offer lower prices enabled by lower transaction costs on alternative mobile payment providers.

73. Anti-steering rules and provisions may also yield exclusionary effects by limiting consumers' access to information about a mobile payment or alternative payment structure. This, in turn, may foreclose competitors bound to anti-steering provisions, deterring entry into the mobile payment market, and depriving end users of potential new mobile payment apps or related offerings.[28]

74. Competition concerns over MFN clauses and anti-steering rules have occurred in traditional card payment markets.[29] For example, in the United States, Visa and Mastercard faced private antitrust litigation where plaintiffs alleged that network rules effectively imposed MFN-type obligations, preventing merchants

from steering cheaper payment options. After years of litigation, the parties reached one of the largest antitrust settlements in US history, with the Second Circuit Court of Appeals upholding the settlement in 2023 while confirming that the underlying claims concerned inflated interchange fees and restrictive merchant rules that deterred competition (Second Circuit, 2023[33]). The private enforcement followed antitrust enforcement (and settlements with Visa and Mastercard) by the U.S. Department of Justice (USDOJ) against similar conduct (USDOJ, 2010[34]).[30] Similarly, multiple cases in the European Union, including by national competition authorities and the European Commission against Mastercard and Visa, address how interchange fee structures and merchant acceptance rules had MFN-like effects, discouraging competition on merchant fees (European Competition Network, 2012[32]).

75. Where mobile payments are offered as part of an ecosystem (or vertically integrated services), anticompetitive conduct can be self-reinforcing, creating a flywheel of anticompetitive effects. In this context, a flywheel refers to a self-reinforcing dynamic where market power and its effects in one service strengthen a provider's position in adjacent services, further reinforcing market power in the original market. To assess the flywheel of potential anticompetitive effects, including effects in mobile payment markets, enforcers may examine the dominant undertaking or monopolist's course of conduct. That is, to assess all the mutually reinforcing strategies and courses of conduct that protect the market power throughout the ecosystem. In the same way that the interdependence between markets in an ecosystem or vertically integrated services may be crucial to the market definition analysis, identifying overarching anticompetitive strategies and their effects may be equally important.

2.3 Interdependencies between new entrants and incumbents

76. While predictions have been made that due to new entry, banks and card networks would soon experience a dramatic loss in market shares, leading to increased competition, this has not happened in most jurisdictions. Instead, interdependencies between BigTech or FinTech and traditional payment providers have emerged. As a result of the risks mentioned in Sections 2.1.1 and 2.1.2, BigTech and FinTech firms generally obtain a license or partner with a bank to provide mobile payment services. A combination of both models is frequently used to operate across different jurisdictions. Table 1 depicts BigTech and large FinTech licenses and bank partnerships across jurisdictions. Importantly, partnerships between smaller Fintechs and banks are more frequent, particularly those related to deposits (Barakova, Ehrentraud and Leposke, 2024[35]).

Table 1. BigTech and large FinTech licenses across jurisdictions

Tech firms	Bank partnership: Deposits	Bank partnership: Payments	Monoline license: Deposits	Monoline license: Payments	Banking license
Apple	US	Global	X	UK, US	X
Amazon	X	X	X	EU, IN, UK, US	X
Ant Group (Alipay)	X	X	X	CN, EU, HK, SG, UK, US	CN, HK, SG
Google	X	Global	X	BR, EU, IN, UK, US	X
Paypal	US	Global	X	BR, HK, SG, UK, US	EU
Mercado Libre	X	X	X	AR, BR, CL, MX, PE, UY	X
Meta	X	IN	X	BR, EU, US	X
Tencent (WePay)	X	X	X	CN, EU	CN, HK

Source: Adapted from Barakova, I., J. Ehrentraud and L. Leposke (2024), A two-sided affair: banks and tech firms in banking, https://www.bis.org/fsi/publ/insights60.htm

77. As discussed in section 1, when entering the market, newer mobile payment providers often rely on traditional payment providers' payment retail-level payment rails to process transactions while providing

consumer-facing apps, wallets, or embedded payments with which users interact. This is because retail-level payment rails are hard to replace. Moreover, regulations may exacerbate the dependence on the traditional providers, as discussed in section 2.1.2. For example, in some jurisdictions, only domestic banks can access payment systems with continuous and real-time settlement of fund transfers. While partnerships may enhance efficiency and provide consumers access to new products and services, they may also introduce varying competition risks depending on the payment service provided in a relevant jurisdiction.

78. Reliance on incumbents may limit the ability of payment providers to develop competing retail-level payment rails or infrastructure or to differentiate meaningfully over time. These arrangements can entrench the market position of traditional payment providers. Moreover, access to retail-level payment rails may be granted selectively, with exclusivity conditions, or on non-transparent terms, limiting the scope and type of participants that may enter the market. Generally, where collaboration replaces rivalry, there is a risk of softening competitive pressure, particularly if the terms of the partnership limit switching or the independent development of alternative offerings. Through the loss of potential competition, these partnerships may additionally steer or co-opt innovation along the preferred path of incumbents and limit the benefits that competition in mobile payments may deliver. In other words, they can dampen the long-run prospects for rivalry, innovation, and cost reduction in concentrated markets and do away with the potential competitive benefits that mobile payments could deliver, discussed in section 1.4.[31]

79. One way to promote less interdependency and increase competition is to ensure that regulation is not a barrier to entry, as addressed in section 2.1.2. For example, the provision of mobile payments should not be limited to banks. By establishing licensing regimes that authorise non-banks to offer these services without the need to partner, while establishing supervisory frameworks that promote financial stability and competition, competition can be unlocked.

80. Importantly, where funds are not swept automatically to a user's linked bank account, like in staged mobile payment services, providers may earn money when users store funds on their platforms by holding and investing funds. Based on prudential policy objectives, staged mobile payments may thus be subject to more oversight and insurance requirements than pass-through mobile payments (PSR, 2025[36]). In other words, where mobile payment providers offer staged offerings, given that these accounts resemble bank deposit accounts (even though they may hold comparatively lower quantities), and users may rely on them without being aware of their differences, additional regulatory and oversight requirements may be appropriately considered (Barakova, Ehrentraud and Leposke, 2024[35]).[32]

81. Regulation for staged mobile payments would, however, benefit from considering the specific characteristics of these deposits and how, if at all, they may differ from traditional bank deposits. Deposit-taking is a core banking activity that usually requires a banking licence. However, some jurisdictions allow non-banks to accept certain types of limited deposits (Barakova, Ehrentraud and Leposke, 2024[35]). For example, in Brazil, the Central Bank has introduced e-money issuer licenses that offer mobile payment accounts without extending credit, fostering competition and innovation. Japan has also introduced recent reforms to the regulatory framework. In 2020, amendments to the Payment Services Act and the Banking Act created new categories, such as "fund transfer service providers" (categorised into three tiers based on transaction value limits), reducing barriers for non-banks to enter segments traditionally dominated by banks, including mobile payment services. Nevertheless, for higher-value mobile payment services—particularly those closely resembling deposit-taking activities—the amended framework requires compliance with prudential standards akin to those for licensed banks (Tomotsune, 2024[37]). In addition, international policy co-operation is also warranted, particularly as mobile payment providers become increasingly international in their operations, as discussed further in Section 3.1.1.

2.4 Considerations for merger enforcement

82. Markets prone to tipping, such as mobile payments, may become entrenched through mergers and acquisitions, leading to reduced consumer choice and diminished innovation incentives. Absent verifiable and merger-specific efficiencies that eliminate risks to competition, horizontal mergers between competitors may eliminate rivalry and increase concentration. Vertical mergers may enable dominant firms to foreclose or raise rivals' costs by controlling key inputs or distribution channels. Mergers need not be in the same market to pose risks of substantially lessening competition. Individually, services may offer different non-competing features to end-users. However, certain features may add to and reinforce the utility of the cluster of features the acquiring firm already offers, thus potentially increasing its market power, raising barriers to entry and reinforcing flywheel ecosystem effects.

83. In some instances, a series of acquisitions may be akin to or part of an exclusionary practice. Besides recognising the cumulative effect of these many acquisitions, it may be important to recognise that individual acquisitions may empower dominant digital incumbents to discontinue either the target firm's or its innovation, thereby eliminating existing and future rivalrous competition between the merging parties. Thus, acquisitions with the potential to extinguish innovative efforts may substantially lessen competition by reducing the opportunities for resulting innovations.

84. As discussed in Box 5 experiences across jurisdictions underscore the importance of merger enforcement.[33]

Box 5. Experiences in merger enforcement across jurisdictions underscore its importance

Norway

In 2018, the Norwegian Competition Authority (NCA) approved the merger between Vipps, BankAxept, and BankID Norge, subject to remedies designed to maintain competition in the mobile payment market. A key condition for approval was Vipps' commitment to providing third-party mobile payment providers with non-discriminatory access to the BankAxept payment infrastructure and the BankID digital ID system, which were deemed essential by the NCA for the provision of mobile payment services. Recognising the ongoing need to facilitate market entry and competition, the NCA extended these remedies in 2021 and again in 2024, ensuring that competitors can continue to access these essential infrastructures. The remedies are currently set to remain in place until April 2027, reflecting the NCA's ongoing monitoring of the remedies and commitment to preserving competitive conditions in Norway's mobile payments ecosystem.

Italy

In 2021, the Italian Competition Authority (AGCM) approved the merger between Nexi and SIA, with conditions to safeguard competition in mobile payments. The merger would consolidate multiple activities related to mobile payment services, including merchant acquiring services, processing, clearing, and transmission of interbank data, among others. The AGCM expressed concerns about the potential for the merged entity to control key aspects of Italy's mobile payment infrastructure. To address these concerns, the AGCM imposed remedies to ensure that the combined entity would continue providing fair access to competitors' critical infrastructure. Thus, maintaining opportunities for innovation and preventing the stifling of competition in the market. These conditions reflected the AGCM's keenness to preserve a dynamic, competitive landscape for mobile payment services in Italy, ensuring consumer choice and technological advancement.

United States

In 2020, the USDOJ sued to block Visa's proposed acquisition of Plaid. This FinTech firm was developing a payments platform with the potential to challenge Visa's dominant position in online debit payments through low-cost disruptive alternatives. The DOJ alleged that Visa's primary motivation was both defensive (neutralising an emerging rival before it could erode Visa's monopoly) and offensive (extending Visa's dominance through a foothold in the related market through open banking). As alleged, the proposed acquisition exemplified a strategy to stifle competition and limit innovation. Among the anticompetitive factors highlighted in the complaint were ordinary course documents underscoring the motivation for the acquisition and the high price tag of the acquisition, which was described as a defensive premium offered for strategic reasons. As a result of the lawsuit, the parties ultimately abandoned the merger, reinforcing the importance of proactive enforcement to avoid the potential substantial lessening of competition in mobile payments and related markets.

Uganda

MTN, the largest telecom company in Uganda, launched its mobile payment services in 2009. By 2011, as adoption started to take off, Warid entered the Ugandan telecommunications market, disrupting telecommunications and mobile payment markets by introducing low-priced promotions encouraging subscribers to register for mobile payment services. Airtel entered the Ugandan telecommunications market in 2010 by acquiring Zain's African operations and launched a competing mobile payment offering in 2012. In May 2013, Airtel merged with Warid, consolidating mobile telecommunications and mobile payment services. The merger was not subject to review by a competition authority, as such an authority did not exist at the time. While the Uganda Communications Commission reviewed the proposed merger from a telecommunications perspective, it did not assess its effects solely through a competition lens or the potential effects in the mobile payments market. While at least five mobile payment providers have operated in Uganda since 2009, research has underscored that the market tipped to a duopoly following the merger. This concentration in the market, with a clear dominance of MTN and Airtel, has remained stable over time, raising concerns about reduced competition leading to coordinated effects and reduced incentives to innovate. Following multiple competition-related complaints, including those related to mobile payment services, Uganda recently introduced the Competition Act of 2024, which empowers the Ministry of Trade to review and approve mergers, joint ventures and acquisitions.

Note: The Ugandan government is also considering establishing a "national switch" to provide interoperability for the national payments infrastructure and promote increased competition in mobile payments.
Sources: NCA (2024), Vipps must allow competitors access to BankAxept and BankID for another three years, https://konkurransetilsynet.no/vipps-must-allow-competitors-access-to-bankaxept-and-bankid-for-another-three-years/?lang=en; NCA (2018), Vipps merger cleared with remedies, https://konkurransetilsynet.no/vipps-merger-cleared-with-remedies/?lang=en, AGCM (2021), C12373-ICA: Nexi-Sia merger authorised subject to conditions, https://en.agcm.it/en/media/press-releases/2021/10/C12373; USDOJ (2021), Visa and Plaid Abandon Merger After Antitrust Division's Suit to Block https://www.justice.gov/archives/opa/pr/visa-and-plaid-abandon-merger-after-antitrust-division-s-suit-block; Paelo and Roberts (2022), Competition and Regulation of Mobile Money Platforms in Africa: A Comparative Analysis of Kenya and Uganda. Rev Ind Organ 60, 463–489 (2022). https://doi.org/10.1007/s11151-022-09858-x; 21 March 2025 Interview of Anthea Paelo by the authors of this paper.

3 Potential pro-competitive initiatives

85. In some jurisdictions, competition enforcement and co-operation amongst competition enforcers and regulators in crafting pro-competitive regulations have played a crucial role in reducing barriers to entry and providing the oxygen for rivalrous innovation in mobile payments. This section will address pro-competitive regulations, including those which address competition risks discussed in section 2 and inspired by or directly flowing from competition enforcement.

86. Recurring competition law enforcement in one sector of the economy often underscores the existence of market-wide failures, from high barriers to entry and expansion, concentration, information asymmetries, which may lead to prices above competitive levels. In these instances, where markets are inherently imperfect and market responses do not effectively remedy these imperfections, well-crafted pro-competitive regulations complement targeted competition enforcement, offering the potential for comprehensive and effective remedies. A combination of timely competition enforcement and regulation drawing from competition enforcement's experiences supports well-functioning markets (OECD, 2021[38]).

87. This section discusses specific pro-competitive initiatives and policy questions concerning certain tools, including the design of open banking, data portability, interoperability standards, reciprocal data requirements, and the imposition of targeted asymmetric regulations forbidding the cross-use of data across platform ecosystems.[34]

3.1 Open banking, data portability, and interoperability

88. Open banking ensures that data can be used more extensively rather than being limited to traditional payment providers, which previously held this data as part of walled gardens, as discussed in section 2.1.1. It thus addresses data asymmetries and enables firms to build applications and services, including mobile payment services (OECD, 2024[5]). While open banking, data portability, and interoperability refer to distinct concepts, they may overlap. For example, continuous data portability requires interoperability to enable systems to communicate with one another to share data on an ongoing basis (OECD, 2021[30]). Open banking is a framework that allows the sharing of banking data via secure interfaces, like APIs, at the request of users with third-party developers, enabling competition with banks. Open banking was adopted as an innovative remedy to address limited competition in banking and the need to enable entry. This evolution was fostered in some jurisdictions through competition enforcement and pro-competitive regulation designed to increase competition in financial service offerings, as addressed in Box 7.

89. As a result of open banking, in parallel to the evolution of mobile payments, consumers' ability to share their financial data has evolved. Open banking is an important example of data portability, allowing users to consent to competing financial service providers, including mobile payment providers, to access their data. Data portability can increase consumer control over their data by actively consenting to its sharing and use. Open banking may also provide the oxygen for competition and innovation by enabling interoperability and reducing switching costs and lock-in effects.

90. Most OECD countries have established frameworks for open banking, enabling mobile payment providers' interoperable access to payment data. Evidence from OECD countries suggests that open

banking frameworks foster innovation and competition, lowering costs and improving the quality of customer experiences by encouraging third-party providers, such as FinTechs, to offer mobile payment services (OECD, 2023[39]). Fintechs' entry into the mobile payments sector has largely been enabled by open banking initiatives, which lowered barriers to entry and expansion (OECD, 2024[5]).

91. As a result, the adoption of open banking is expected to continue to grow or be improved throughout jurisdictions. Open banking initiatives vary globally, including through different mixtures of public and private infrastructures, but generally aim to promote competition in the financial sector. Some jurisdictions have adopted open banking through market-led initiatives, with governments at times opting to take a "facilitative approach" by issuing guidance and recommending standards. In other jurisdictions, where market-led initiatives failed or were not expected, regulators have taken a "prescriptive approach" to open banking, mandating that banks provide developers access to customer data and payment initiation (Basel Committee on Banking Supervision, 2019[40]). Jurisdictions with prescriptive approaches also differ in how they implement open banking, including the technology and standards used, from the prescription of APIs to the functionality and scope of data accessible.

3.1.1 Design of technical standards and harmonisation of APIs

92. There are benefits and costs associated with the differing approaches to standards relevant to data portability, interoperability, and open banking. On the one hand, in some jurisdictions, a key element of open banking success was the development of common technical standards for data transfers, which promotes interoperability. APIs are the key enablers of interoperability, facilitating the data flows and ensuring that data is accessed in a functional, manageable and timely manner. APIs can promote the interoperability of different software applications or technology systems by providing the technical means for a software application to request and transfer data.

93. The lack of API technical standards or requirements for functionality and performance may present challenges within and across jurisdictions (OECD, 2023[41]). In jurisdictions with no single API standard, the data received often undergoes additional transformation steps for the receiving mobile payment provider to utilise the data (European Commission, 2022[42]). The lack of consensus across jurisdictions on standardised APIs also presents interoperability and compliance challenges for mobile payment providers wishing to operate across borders.

94. While standards may facilitate switching, they may also pose a barrier to entry or disincentivise innovation, with broad consequences for competition. Imposing a single standard does away with technology neutrality, posing the risk of being too rigid and not future-proofed, since technology may advance, bringing better alternatives in the future and hindering innovation. Moreover, standardisation may be slow-moving in addition to coming with high implementation costs, which serve as a barrier to entry. Importantly, while the imposition of standards may result in efficiency benefits, they require continuous multi-stakeholder engagement to ensure that design and restructuring occur, where changes in technical capabilities and incentives by mobile payment providers merit changes.

95. Harmonised APIs can make payment systems more interoperable (CPMI, 2022[43]).[35] In a cross-border mobile payment context, where person-to-person mobile payments facilitate international remittances, amongst other payment purposes, differing standards may pose entry and interoperability challenges for mobile payment providers. This presents an opportunity for regulators and competition authorities to assess, through international co-operation, how to reduce the fragmentation of standards or requirements for functionality, promoting interoperability through harmonisation (OECD, 2023[39]).

96. Indeed, enhancing cross-border payments' speed and transparency while increasing access to cross-border payment services and reducing costs are key objectives of the G20 to boost financial inclusion (FSB, 2023[44]).[36] The Financial Stability Board has published cross-border payment priorities to achieve

these goals, including payment system interoperability, extension, data exchange and message standards (FSB, 2023[44]) (2024[45]).[37]

97. Communication standards developed by the International Organisation for Standardisation (ISO) may provide a baseline that promotes interoperability and switching.[38] Following work by the Committee on Payments and Market Infrastructures to promote a global payment messaging standard, ISO20022, the lack of standardisation for APIs has been identified as a challenge by the G20 and follow-up work is underway. The ISO has also established an API Standardisation Working Group, but standardisation for APIs is at an earlier stage relative to other standards, such as messaging (CPMI, 2022[43]) (2024[46]). The development of these standards will require balancing to ensure they do not pose barriers to entry or prevent or steer innovation. Specific mandatory minimum requirements for APIs, such as those in the EU's PSD3, are discussed in Box 6 and may provide helpful guidance. Interoperability may be a critical enabler to competition, and guidance promoting this important competition tool is worthy of assessment, mainly as more innovative technologies and mobile payment systems increasingly rely on access to data and the ability to communicate.

Box 6. The EU's Payment Services Directive and its evolution: PSD1-PSD3

An example of a pro-competitive regulation is the EU's Payment Services Directive. A key element of its success is that it has been regularly re-evaluated and updated. This has been accomplished in co-operation between regulators, accounting for competition, privacy, consumer protection, and prudential objectives. The first Payment Services Directive (PSD1), adopted in 2007, established a harmonised legal framework for an integrated EU payments market. It was adopted to provide a harmonised set of rules for the authorisation, supervision, and provision of payment services in response to concerns regarding the ability of traditional payment providers to deny rivals access to their payment infrastructure. In 2012, PSD1 was evaluated by the European Commission (EC). Considering market developments, the EC found that PSD1 was outdated by excluding certain payment services, such as emerging payment solutions based on payment account access (open banking) provided by FinTechs and often made available through mobile devices. The exclusion resulted in legal uncertainty and barriers to market entry for those providers. Thus, the second Payment Services Directive (PSD2) was proposed and adopted in 2015, setting out rules and requiring the licensing and supervision of all retail payment providers. PSD2, amongst other goals, aimed to increase choice for payment service users (customers and merchants) by levelling the playing field between traditional payment service providers and new providers, including open banking FinTechs and providers of mobile payment solutions, providing the oxygen for innovation and competition. With this aim, PSD2 provided open banking with a regulatory framework, imposing obligations on payment service providers offering payment accounts (including banks) to facilitate access to users' payment account data to other payment providers, with the consent of the payment service user.

In 2022, with advice from the European Banking Authority and informed by a public consultation and an independent report, the EC evaluated PSD2. The assessment highlighted that PSD2 resulted in quantifiable benefits of EUR 1.6 billion from innovation and competition. At the same time, it was identified that there continues to be an unlevel playing field between bank and non-bank payment service providers, flowing from the imperfect functioning of open banking and barriers to access to key payment infrastructures necessary to execute and settle payments. Payment service providers require access to key payment systems to operate, including access to retail-level payment rails. Such access may be direct or indirect via another participant in that payment system. This establishes a structural dependency on banks and poses competition concerns as banks are competitors in mobile payment services.

Following the evaluation, the EC proposed amendments to PSD2. In addition to tackling multiple issues, such as fraud, the EC's proposal for a Payment Services Regulation (PSR) aims to further level the

playing field by improving open banking and access to key payment infrastructures. It promotes competition and innovation by imposing availability and performance requirements for open banking data access interfaces such as APIs, prohibiting certain obstacles to data access, and introducing provisions for business continuity, such as contingent data access. It also reinforces the rules on access to payment systems to decrease dependency on banks by strengthening rights to access and visibility into the methodology for access by setting requirements regarding the objective, proportionate, and non-discriminatory admission of new payment providers. The EC projects that PSR, as well as PSD3, expected to come into force in 2026, will ensure fairer competition between banks and non-bank providers and result in increased choice and lower prices for consumers and merchants, including in terms of mobile payment solutions, amongst other benefits. In sum, the EU's Payment Services Directive and its evolution underscore the role of regulation in promoting contestable markets and the importance of frequent reviews and revisions, accounting for evolving market realities.

Note: The EC and European National Competition Authorities adopted several antitrust decisions related to interchange fees. For example, the EC adopted the Mastercard Decision 2007. As discussed in Section 2.2.3, the French Competition Authority imposed binding commitments on the Groupement des Cartes Bancaires in 2011 to reduce domestic interchange fees. As a result of this enforcement, and to level the playing field, Regulation (EU) 2015/751 on interchange fees for card-based payment transactions came into effect in 2015, along with PSD2. For an overview of cases, see European Competition Network (2012), Information Paper on Competition Enforcement in Payments Sector, https://competition-policy.ec.europa.eu/system/files/2021-10/information_paper_payments_en.pdf.
Sources: EC (2023), Commission Staff Working Document Impact Assessment Report, June 28, 2023, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023SC0231; EC (2023), Payment services: revised rules to improve consumer protection and competition in electronic payments, EC website, https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_3544; EC (2023), Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on payment services and electronic money services in the Internal Market amending Directive 98/26/EC and repealing Directives 2015/2366/EU and 2009/110/EC, https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52023PC0366; EC (2023), Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on payment services in the internal market and amending Regulation (EU) No 1093/2010, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52023PC0367; OECD (2021), Competition Enforcement and Regulatory Alternatives, OECD Competition Committee Discussion Paper, http://oe.cd/cera; EC (2013),Payment Services Directive and Interchange fees Regulation, https://ec.europa.eu/commission/presscorner/api/files/document/print/en/memo_13_719/MEMO_13_719_EN.pdf.

98. An important consideration, underscored by recent research, is that in nascent markets, standardisation left to market-led initiatives to jumpstart an industry supports innovation (Dinçkol, Ozcan and Zachariadis, 2023[47]). However, in established industries, competition enforcers and regulators might consider a more hands-on approach as a lack of, delayed, or poorly designed standards can result in economic inefficiencies and may negatively impact an industry's structure (OECD, 2023[41]) (Dinçkol, Ozcan and Zachariadis, 2023[47]). Moreover, as discussed in section 2.1.3, risks that incumbents could capture the standard-setting process should also be monitored. Considering the characteristics of mobile payment markets where lock-in, tipping and flywheel effects, among others, may be observed, inferior standards may become irreversible or hinder innovation. Thus, policymakers should assess whether early standard-setting processes are sufficiently adaptive to evolving technologies to avoid risks of path dependency as markets develop.

99. Thus, a potential pro-competitive initiative when assessing how to implement or improve open banking frameworks, data portability, and interoperability standards is to consider the level of competition in the relevant market. This may inform the need for prescriptive approaches (to address market failures) or facilitative approaches (to stimulate ongoing competition).[39] Since data portability initiatives address issues at the intersection of competition, privacy, and consumer protection, and payments also raise prudential concerns, among other things, co-operation among regulators (including central banks) and competition authorities is crucial when formulating policies or standards. The OECD Competition Committee has discussed interactions between competition authorities and sector regulators in the recent past, benefiting from the OECD's horizontality across policy areas (OECD, 2022[48]). Box 7 discusses examples of open banking, data portability, and interoperability experiences across jurisdictions.

Box 7. Examples of open banking, data portability, and interoperability experiences across jurisdictions

The UK and EU

The UK and EU's open banking initiatives provide a comparative example of differing prescriptive approaches. Both initiatives aim to foster competition in payments by allowing third-party providers to access payment account data held chiefly by banks, which historically held monopoly power over payment account data and payment services. Open banking emerged as a novel data portability remedy in the UK following the 2016 market inquiry into retail banking by the Competition and Markets Authority (CMA). The market inquiry found that banks did not face sufficient competition and aimed to encourage entry and switching in the market for personal current accounts by allowing users to share their financial data held by banks with third-party developers to enable new entry. The CMA also anticipated broader benefits from the open banking remedy, such as increased competition in mobile payments. As part of the remedy in 2017, the CMA mandated nine of the largest banks to implement common technical standards via APIs for open banking under the retail banking market investigation order. In other words, the CMA mandated what data would be accessed via what technology.

PSD2, previously addressed in Box 6, provides the regulatory foundation for open banking in the EU. It differs from the UK CMA's remedy in that it is technology agnostic, and there is no specific technical standard, such as mandated standardised APIs, that banks must follow. By setting detailed standards, the UK avoided a "standards battle" and a speedier pace of adoption. The UK is considered a success story in the adoption of open banking. As of 2022, there were over five million users of services powered by open banking in the UK, including over 300 regulated providers. As underscored by the UK's 2024 National Payments Vision, the combination of the Payment Services Regulations and the CMA order on open banking, through API standards, has enabled entry into the market and provision of innovative products and services. The EU's proposed PSD3 reforms do not prescribe a standard API. However, Section 2 (articles 35-39) of the Payment Services Regulation (PSR), which addresses data access interfaces and is part of the PSD3 reform package, provides specific mandatory minimum requirements for APIs. In addition, the EU's Digital Markets Act and Data Act, as discussed in Box 8, are also worth underscoring as further fomenting data interoperability.

Hong Kong (China)

Many government initiatives undertaken by certain jurisdictions provide alternatives to outright standardisation, but generally, counsel toward more hands-on guidance on functionality and performance requirements for open banking data access interfaces, such as APIs, to promote competition. Hong Kong (China) has recently undertaken a more hands-on role in defining standards as part of its phased facilitative approach. The first phase recommended technical standards based on international experiences as part of an Open API Framework that provided a collaborative approach where the Hong Kong Monetary Authority (HKMA) could monitor the implementation progress. After reviewing implementation challenges in 2021, the HKMA stated it would be more proactive in defining standards. As a result, the Hong Kong Association of Banks established API standards based on the HKMA Open API framework's suggested standards.

Singapore

Singapore presents another example of a facilitative approach. Due to pro-competitive regulatory policies, the banking sector has been observed as competitive; this led to open banking launching as a market-led initiative. To stimulate interoperability, the Monetary Authority of Singapore (MAS) and the Association of Banks in Singapore published an API playbook to encourage banks to participate in the framework. Singapore's pro-competitive regulatory policies underscore the benefits of close co-operation between competition agencies and regulators in the financial sector. Indeed, Singapore touts

that it is one of the most open and competitive economies by incorporating competition in its public policies, stimulating market-driven innovations, and providing a conducive environment for sustainable economic growth. The Competition and Consumer Commission of Singapore (CCCS), as part of its statutory duty to advise government agencies on policies concerning competition, works closely with government agencies, including the MAS. The MAS established the Payments Council in 2017 to promote interoperability among mobile payment systems. The CCCS provides advice through participation in the relevant work groups, and to date, the CCCS continues to support MAS in its effort to foment competition in mobile payments in Singapore.

The United States

The US is a key example of the market-driven approach. The Consumer Financial Protection Bureau (CFPB) estimates that as of 2022, at least 100 million consumers had authorised a third party to access their account data, surpassing the comparable figures from some other jurisdictions' open banking systems, including on a per-capita basis. However, the CFPB identified that inconsistent data access due to divergent interests in the market concerning the scope, terms, and mechanics of data access impeded the development of market-wide standards, leading to inefficiencies. It also determined that since data intermediaries' interests stand to benefit from existing private network effects, they may not always advance open banking. Thus, in 2024, the CFPB adopted a rule to accelerate and deepen open banking and enable consumers to share payment information and make payments securely. The rule aims to increase competition in payments markets, which the CFPB highlighted have long been an area of concern due to anticompetitive practices and limited competition. The rule requires financial institutions, credit card issuers, and other financial providers to unlock an individual's financial data and transfer it to another provider at the consumer's request for free. The CFPB anticipates that the rule would help lower prices and improve customer service across payments and adjacent markets by fuelling competition and consumer choice. As part of the rule, the CFPB called on industry-led bodies to define the APIs and technical standards with an initial deadline of April 2026 to become operational. However, the future of the CFPB's open banking rule remains uncertain due to ongoing legal challenges and potential regulatory changes.

Kenya

Most recently, the Central Bank of Kenya has turned to a more prescriptive approach to open banking by facilitating the development of API standards and mandating robust data-sharing in response to competition concerns. As discussed in Box 3, since 2014, mobile payment operators have been mandated to develop interoperable systems. The National Payment Initiative from 2022-2025 aims to improve the limited implementation of APIs, which has been identified as a barrier, enabling the dominant mobile payment provider to maintain its entrenched market position at the expense of new entrants. The foreseen standards will include API specifications for identification, verification and authentication, and enabling transaction initiation.

Note: The CMA remedy was imposed alongside the implementation of PSD2, which the UK (as part of the EU at the time) transposed into law in 2017. This resulted in broader open banking requirements beyond the nine banks initially covered by the CMA order. This CMA remedy was also informed by a report published by the Open Banking Working Group, a government and industry initiative established in 2015, to explore how data could be used to open banking competition, as the CMA investigation was ongoing.
Article 37 of the EU's PSR (part of the PSD3 reform package) establishes performance requirements concerning response time latency. These requirements aim to promote interoperability and foster the standardisation of APIs.

Source: CMA (2022), Lessons Learnt from Open Banking, https://assets.publishing.service.gov.uk/media/62908644d3bf7f036ebf5880/CMA_OB_Lessons_Learned_Review.pdf; CMA (2021), Update on Open Banking, https://www.gov.uk/government/publications/update-governance-of-open-banking/update-on-open-banking; HM Treasury, National Payments Vision, https://assets.publishing.service.gov.uk/media/6736385fb613efc3f182317a/National_Payments_Vision..pdf; European Union (2023), Regulation (EU) 2023/2854 of the European Parliament and of the Council of 13 December 2023 on harmonised rules on fair access to and use of data and amending Regulation (EU) 2017/2394 and Directive (EU) 2020/1828 (Data Act), https://eur-lex.europa.eu/eli/reg/2023/2854/oj/eng; HKMA (2023), Eddie Yue, Chief Executive, Hong Kong Monetary Authority Keynote at the Hong Kong FinTech Week 2023, https://www.hkma.gov.hk/eng/news-and-media/speeches/2023/11/20231102-1/; CBK (2022), National Payments Strategy 2022-2025, https://www.centralbank.go.ke/wp-content/uploads/2022/02/National-Payments-Strategy-2022-2025.pdf; OECD (2017), "Ten Years on from the Financial Crisis: Co-operation between Competition Agencies and Regulators in the Financial Sector", *OECD Roundtables on Competition Policy Papers*, No. 207, OECD Publishing, Paris, https://doi.org/10.1787/64f9e92c-en; CFPB (2024), CFPB Finalizes Personal Financial Data Rights Rule to Boost Competition, Protect Privacy, and Give Families More Choice in Financial Services, https://www.consumerfinance.gov/about-us/newsroom/cfpb-finalizes-personal-financial-data-rights-rule-to-boost-competition-protect-privacy-and-give-families-more-choice-in-financial-services/; Weinberger (2025), *CFPB Plans to Revisit Open Banking Rule Despite Staff Cuts,* Bloomberg Law,https://news.bloomberglaw.com/banking-law/cfpb-plans-to-revisit-open-banking-rule-despite-workforce-cuts; Colangelo and Khandelwal (2025), The many shades of open banking: A comparative analysis of rationales and models, 10.14763/2025.1.1821; ABS (2026), API Playbook, https://abs.org.sg/docs/library/mediarelease_20161116.pdf; World Bank (2022), Technical note on Open Banking, https://documents1.worldbank.org/curated/en/099345005252239519/pdf/P16477008e2c670fe0835a0e8692b499c2a.pdf; CCCS (2016), The Role of Competition in Singapore's Economic Growth and Public Policies, https://www.cccs.gov.sg/resources/publications/occasional-research-papers/archive/role-of-competition-in-singapore-economic-growth.

3.1.2. Reciprocal data access considerations for open banking

100. In some cases, imposing or encouraging reciprocal data-sharing between mobile payment providers may facilitate competition. This may be a relevant consideration when assessing the current level of competition, and particularly how the market might evolve, in tailoring open banking approaches. For example, in the case of industry-led open banking initiatives, incentives may be required to counter the costs that incumbents may need to pay for the development and maintenance of APIs or other data sharing infrastructures. Even where regulatory requirements mandate data sharing, the absence of commercial incentives may lead to underinvestment, resulting in underperforming or poorly maintained infrastructure, ranging from degraded API performance to a lack of technical support. Reciprocal data sharing may provide the relevant incentives, along with potentially additional incentives such as economic compensation or benefits associated with the alleviation of technical friction (OECD, 2023[41]).

101. In other instances, asymmetric obligations—applying more stringent requirements to incumbent providers—may be appropriate to ensure small, new, and potential entrants can compete effectively. Most open banking frameworks across OECD jurisdictions impose asymmetric obligations on banks to share data (OECD, 2023[39]). However, as mobile payment markets evolve, reciprocal data sharing between certain mobile payment providers may help alleviate competition concerns stemming from data asymmetries. For example, reciprocal data sharing could prevent disadvantages to competing mobile payment providers with BigTech providers, who might gain an advantageous position over time. That said, reciprocal data-sharing arrangements may also carry competition risks, as increased transparency between providers could facilitate tacit coordination or collusion, particularly in highly concentrated markets. Specifying what in-scope data may be shared and ensuring this is limited to enabling competition is thus an important consideration. For example, user data enhanced by a provider to offer significant additional value or insight could be excluded from the scope.

102. Open banking frameworks with reciprocal access to data could level competitive imbalances between mobile payment providers and BigTechs concerning the latter's unparalleled competitive advantage enabled through its vast data collection and use. Where BigTech dominance in mobile payments and entrenchment in adjacent markets is a concern, this might ensure that the regulatory framework does not enhance this advantage further. Since BigTechs, in most jurisdictions, are not

precluded from combining payment account data with non-financial services data (such as data from social media, web browsing, or e-commerce activity), reciprocal access to specific relevant data may present a potential opportunity (European Commission, 2023[49]). [40] Reciprocal data access implements users' rights to data portability and may enable competition by allowing users to compare services across multiple mobile payment providers. In other words, it may help ensure that the open banking frameworks do not just open markets once, but that they stay contestable as markets mature. As such, reciprocal access may be relevant to fomenting ongoing competition between existing players, not just enabling FinTech entry. However, before markets mature, it may be disproportionate and limit competition to consider certain entrenched payment providers as data beneficiaries.

103. The alternative, particularly while the market develops, may be to preclude certain mobile payment providers (e.g., BigTechs) from combining payment account data with non-financial data. Certain jurisdictions have adopted asymmetric digital market regulations prohibiting such data combinations, as discussed in Section 3.2. Markets may be prone to tipping, enabled by data asymmetries, walled gardens, and data-network-activity loops, reinforcing market positions. In such contexts where these risks are identified, open banking API standards, reciprocal data-sharing frameworks or asymmetric obligations on data use and combination present a potential pro-competitive initiative. In the context of mobile payment services offered as part of a digital ecosystem, additional asymmetric obligations that enable access to a previously closed ecosystem or ensure that access remains open, as discussed in the Section below, present additional potential tools for consideration.

3.2 Asymmetric digital market regulations

104. Mobile payment service markets may be prone to certain market failures, generally present in digital markets due to their unique characteristics, as discussed in section 2.1.1. These may include entrenched market power, asymmetric access to data, and negative externalities, which may prevent the market from providing its full value. A potential pro-competitive initiative for consideration by competition authorities and regulators, particularly as markets evolve and may become prone to tipping by BigTech mobile payment providers, may be to address these competition risks through asymmetric digital market regulations (Carugati, 2020[50]).

105. Asymmetric digital market regulations have been enacted in several jurisdictions, targeted at addressing the substantial and entrenched market power of designated BigTech firms stemming from their role as intermediary platforms and providers of services and goods in several markets.[41] Previous work by the OECD discusses these targeted digital market regulations.[42] While these regulations aim to promote contestability in multiple digital markets, they are relevant to competition in mobile payments. Indeed, several targeted digital market obligations included in the regulations are specifically tailored to opening competition in mobile payments.[43]

106. Some of these obligations may also provide an alternative to the reciprocal cross-sharing of data via open banking, discussed in the preceding Section and in Box 8 below.[44] While these obligations aim to limit BigTechs' perceived unparalleled data advantage, including in mobile payment services, which may prevent markets from tipping, it is also worth underscoring that they may impact BigTechs' incentives or ability to offer innovative mobile payment services.[45] Thus, like with other regulations that aim to have pro-competitive effects, constant monitoring and tailoring are key to ensuring regulations effectively meet their objectives and respond to unintended consequences.

Box 8. The EU's Digital Markets Act

107. In the context of mobile payments, the European Union's Digital Market Act (DMA) provides an example of asymmetric digital market regulation that imposes multiple obligations on BigTech designated gatekeepers that aim to promote contestability and address competitive advantages in mobile payments, including data asymmetries. The DMA contains specific obligations to prevent competitive advantages by BigTech mobile payment providers as facilitated by the "data-network-activities" loop.

Provisions addressing the risk of data asymmetries

108. The DMA prohibits the combination and cross-use of user data, which may give BigTech mobile payment providers a competitive advantage, as addressed in section 2.1.1, absent the prohibition or alternative measures.

- Article 5(2) specifies that a gatekeeper shall not combine or cross-use personal data from a relevant core platform service in other services provided separately by the gatekeeper and vice versa, without end user consent.
- Article 6(2) specifies that a gatekeeper shall not use any data that is not publicly available and generated or provided by business users in the context of their use of the relevant core platform services or the services provided together with or in support of, the relevant core platform services (including data generated or provided by the customers of those business users) when competing with those business users.

109. The DMA additionally provides access to data, which a mobile payment provider may request from a BigTech designated gatekeeper to level the playing field. This imposes an asymmetric data access and interoperability obligation, like open banking initiatives do on traditional payment providers.

- Article 6(10) provides that a gatekeeper must provide business users and third parties, authorised by a business user, with free of charge, effective, continuous, and real-time access to data generated or provided by business users (or their end users) in using core platform services or services provided together with or in support, of the relevant core platform service.
- Recital 59 suggests that effective provision of data relates to the format in which the data is accessible, such as interfaces or 'tools' provided by the gatekeeper.
  - Article 48 of the DMA allows the regulator to request European standardisation bodies to develop standards for portability.
  - Recital 96 adds to Article 48, stating that "[t]he implementation of some of the gatekeepers' obligations, such as those related to data access, data portability or interoperability could be facilitated by technical standards."

The DMA and the Data Act

110. The Data Act also aims to reduce barriers to entry through data sharing and reduction in data silos, promoting standards and technical interoperability for connected products and related services, including obligations applicable to mobile device manufacturers and OS providers. It refers to the DMA in connection to access to data and states that, based on gatekeepers' unrivalled ability to acquire data, it would be disproportionate for data holders subject to the Data Act's obligations to include gatekeepers as data beneficiaries. The EU's approach is asymmetric, opting against reciprocal data-sharing alternatives. The Data Act adds that voluntary agreements between gatekeepers and data holders remain unaffected. The limitation on granting data access to gatekeepers and the asymmetric obligations from the DMA does not exclude them from the market or prevent them from offering their services.

Sources: European Commission (2020), Commission staff working document impact assessment report accompanying the document Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020SC0363; European Union (2023), Regulation (EU) 2023/2854 of the European Parliament and of the Council of 13 December 2023 on harmonised rules on fair access to and use of data and amending Regulation (EU) 2017/2394 and Directive (EU) 2020/1828 (Data Act), https://eur-lex.europa.eu/eli/reg/2023/2854/oj/eng.

3.3. Open and interoperable retail-level alternative payment rails

111. Interoperable retail-level alternative payment rails refer to a technical framework that allows different payment service providers, platforms, and systems to exchange information and execute transactions seamlessly. Where these infrastructures process payments, they can serve as alternatives to the bank-centric model and its retail-level payment rails, as discussed in section 1.3 and the related risks to competition from the reliance on these traditional payment providers in section 2.3.

112. When designed with open access to all mobile payment providers, regardless of who operates them, and under fair, transparent, and non-discriminatory conditions, these alternative retail-level payment rails can lower entry barriers, reduce switching costs, and prevent market fragmentation. As a result, they may enable new mobile payment providers to compete on service quality, pricing, and innovation and heighten the competitive pressure on incumbent providers.

113. Governments in several jurisdictions have promoted interoperable payment infrastructures and alternative retail-level rails by either mandating interconnection between providers or developing shared infrastructures, such as through national payment switches and fast payment systems. National payment switches enable connectivity and interoperability between providers. Fast payment systems enable speed and real-time transaction settlement. Both are examples of alternative retail-level payment rails that may increase competition by lowering reliance on traditional payment providers. In practice, they often work together—a fast payment system may be built on top of a national payment switch.

3.3.1 National payment switches

114. A national payment switch is a centralised infrastructure that enables the interoperability and routing of transactions between various financial institutions and payment service providers within a country. It is a hub connecting different networks—e.g., banks, FinTechs, BigTechs and MNOs. In other words, these platforms, often operated by public entities, enable seamless communication and transaction processing across different payment providers.

115. By offering all actors access to a common, non-discriminatory platform, national switches can reduce network effects as a source of entrenchment, lower entry costs for new players, and facilitate competition based on quality, price, and user experience. However, the right timing and implementation of interoperability mandates are challenging. Imposing interoperability too early, before providers have reached sufficient scale, may reduce incentives to invest in innovation. A phased approach that balances early competition with preserving innovation incentives may be more likely to deliver sustainable benefits.

116. India's Unified Payment Interface (UPI), addressed in Box 8, is both a national payment switch and a fast payment system. It is an example of a fast payment system built on top of a national payment switch. National payment switches and fast payment systems are distinct but complementary types of alternative payment rails that may promote competition by reducing reliance on the traditional retail-level payment rails operated by banks and card networks.

3.3.2 Fast payment systems (FPS)

117. Fast Payment Systems (FPS), also referred to as instant or real-time payment systems, allow near-instantaneous transfers between bank and non-bank accounts. While a national payment switch acts as a shared hub to connect diverse providers, an FPS ensures the speed and immediacy of the actual payment. These systems offer open and interoperable infrastructures that may lower entry barriers, increase efficiency, and foster innovation. Unlike the bank-centric model—characterised by proprietary protocols, high fees, and closed-loop arrangements—these alternative rails may promote competition by enabling bank and non-bank payment providers to compete on a level playing field. As a result, they have

the potential to introduce greater dynamism into retail payments, driving down costs and spurring service improvements that may ultimately benefit consumers and merchants alike (Cornelli et al., 2024[51]).

118. FPS systems may also incentivise incumbent banks to compete more vigorously on service quality, speed, and user experience. As highlighted by the G20, cross-border interoperability between FPS platforms can unlock further gains, promoting competition not just within countries, but across them (FSB, 2024[45]). Initiatives such as Project Nexus led by the Bank for International Settlements and the central banks of five Asian countries (India, Malaysia, the Philippines, Singapore and Thailand) aim to standardise modes of communication (such as messaging and APIs) to allow real-time cross-border transactions, broadening the competitive landscape and improving costs and access for remittances and other international payments.

119. However, developing alternative retail-level payment rails, such as national payment systems and FSPs, often requires significant public investment and thoughtful regulatory design. Central banks have often played a catalytic role, ranging from operational support to full-scale development and ownership of payment infrastructure. These initiatives may also involve pricing regulation or subsidies. As such, their impact on market structure and competition can be profound. As discussed in Box 9, these alternative payment rails enabled by government policy initiatives have been widely adopted in certain jurisdictions. Similar initiatives have been launched or are being considered in additional jurisdictions.[46]

Box 9. Examples of alternative mobile retail-level payment rails

India

120. In India, the Unified Payment Interface (UPI) was launched by the Reserve Bank of India in 2016 in partnership with the private sector. It is operated by a non-profit entity, the National Payments Corporation of India (NPCI). Unlike mobile payment adoption across other jurisdictions, where alternative providers, such as MNOs, build autonomous infrastructures, tipping the market toward monopoly, or, as in other jurisdictions, where the traditional payment providers remain entrenched and increasingly interrelated to new providers. In India, different firms compete on the same UPI infrastructure that the government provides. UPI's success has been attributed to an open and interoperable infrastructure facilitated by standard APIs. Any mobile payment developer can create an app integrated with UPI. UPI also enables multi-application transactions, allowing users to make secure and quick transactions to any other account registered with UPI. The government has facilitated this, establishing that all operators should rely on at least one of two interoperable QR code standards.

121. UPI is layered on top of the broader national payment switch infrastructure provided by the NPCI. UPI is also a real-time retail payment system that enables users to send and receive money instantly, 24/7, across bank accounts. The unified, open API layer enables any mobile payment provider (e.g., Google Pay, PhonePe, Paytm, BHIM) to initiate transactions on the UPI retail-level rail. The switch handles the plumbing, while UPI delivers the speed and user-facing innovation. This layered approach ensures that real-time payments happen quickly, reliably, and securely, even at massive volumes.

122. The use of UPI data is strictly regulated. BigTechs, for example, are not allowed to extract rents from users' transaction data. Regulators have also carefully calibrated the UPI regulations to support competition while being mindful of financial stability. In 2021, the NPCA set volume restrictions for transactions processed by any one mobile payment provider on UPI.

123. However, despite UPI's interoperable design, that is not to say that BigTech companies like Google Pay and PhonePe (a subsidiary of Flipkart) have not achieved large market shares in India through other competitive advantages, such as access to a large user base and financial wherewithal. The Competition Commission of India (CCI) examined allegations of exclusion of rival UPI apps on the

Google Play Store to address the risk of lack of access to or interoperability, discussed in Section 2.1.3. In response, Google changed its policy in 2022. This underscores the ongoing necessity of competition enforcement and advocacy in parallel with pro-competitive initiatives by the government.

Brazil

124. The Central Bank of Brazil deployed Pix, an FSP instantaneous bank transfer technology, in 2020. Before Pix was introduced, most transactions were cash-based, and large banks held a competitive advantage due to the lack of interoperability, including in ATM networks. Thus, switching costs and infrastructure gaps created significant obstacles for FinTech entry and user adoption for mobile payments. The Central Bank initially encouraged the private sector to develop fast payment systems, but it did not happen due to co-ordination failures and misaligned incentives. As a result, PIX was designed as an inclusive national solution with open architecture, interoperability and unbiased governance at its core. In other words, like UPI, Pix is built on a public payment infrastructure that relies on the central bank's foundational role in promoting competition and interoperability between payment platforms, fostering financial inclusion. By design, central bank payment infrastructures are built on an open architecture and API technical standards that open the system to competition. Pix is managed, operated, and owned by the central bank. It is considered a "public good infrastructure." Pix's overwhelming adoption by users (with 89% of the population using Pix by 2025) can also be attributed to the mandatory participation of banks, which helps create network effects for users, and the central bank's decision to make Pix transfers free of charge for individuals and low fees for merchants, namely through the imposition of caps on interchange fees. Pix, like UPI, is a successful example of central bank-led public infrastructures that aim to promote competition, financial inclusion, and lower costs through alternative retail-level payment rails.

Note: UPI's widespread adoption is facilitated by pricing regulation (including government subsidies) and India's digital identity initiative (Aadhaar), which has improved access to finance by ensuring that most of the population has a bank account. In Brazil, the 2013 amendments to the law granting the Central Bank regulatory authority over the payment system have substantially benefited the market and bank regulation. While not called a "national switch" per se, Pix is built on a centralised architecture managed and operated by the Central Bank of Brazil (BCB), which performs functions similar to those of a national payment switch, such as a central clearing and settlement hub, connecting all participating institutions. Pix is explicitly designed to meet the key features of a fast payment system with (1) real-time settlement: Funds are transferred and settled within seconds, (2) 24/7/365 availability: Transactions are processed continuously, including nights and weekends; (3) Account-to-account transfers: Pix enables seamless person-to-person (P2P), person-to-business (P2B), business-to-business (B2B), and government payments, and (4) Push and pull functionality, where users can send or request money.

Sources: Aurazo (2024), Faster digital payments: global and regional perspectives, BIS, https://www.bis.org/publ/bppdf/bispap152.pdf; CCI (2022), CCI imposes a monetary penalty of Rs. 936.44 on Google for anti-competitive practices in relation to its Play Store policies, https://cci.gov.in/images/pressrelease/en/pr-no-562022-231666698260.pdf; Duarte (2022), Central banks, the monetary system and public payment infrastructures: lessons from Brazil's Pix, https://www.bis.org/publ/bisbull52.pdf.

4 Conclusion

125. Competition and innovation are essential to the continued efficiency of mobile payment services and their contribution to long-term economic growth and stability. Pro-competitive regulations, competition advocacy, and enforcement have played a crucial role in reducing barriers to entry and fostering innovation across jurisdictions. A combination of timely enforcement and targeted regulations, inspired by competition enforcement experiences, has enabled new entrants to compete and innovate in mobile payments.

126. Despite the opportunities for competition stemming from innovation and new entry in mobile payment services, several competition risks are present and require ongoing monitoring by competition authorities. Enforcement experiences underscore that market dominance in the mobile payment sector can lead to anti-competitive outcomes where the direction of innovation may be steered or co-opted without timely enforcement. Thus, in addition to the potential adoption of pro-competitive regulations to promote contestability, competition enforcement is essential to protect mobile payment markets. This ensures the correct functioning of markets, driving lower prices, more choice, and quality improvements available to consumers and merchants while fostering innovation. Key competition risks and considerations highlighted in this paper include:

- **Regulation** may, in some cases, present as a potential barrier to entry or expansion. In this connection, collaboration between competition authorities, central banks, and regulators, both nationally and internationally, is key to ensuring regulatory frameworks remain consistent and effective across jurisdictions and avoid fragmentation that could increase barriers to entry.
- **Structural characteristics of mobile payment markets**. Features such as network effects, switching costs, vertical integration, and data asymmetries can raise barriers to entry and favour market concentration. These dynamics may offer short-term benefits but risk long-term harm to competition and innovation.
- **Lack of interoperability**. While interoperability can promote contestability, its absence may stem from technical or legacy constraints rather than exclusionary intent. This distinction is important for determining the appropriate policy or enforcement response.
- **Lack of access to key technological infrastructures or functionalities**. In some cases, such as restrictions on NFC technology, incumbents may intentionally limit access, creating barriers to entry and expansion with exclusionary effects.
- **Exclusionary practices**, including foreclosure, raising rivals' costs, tying, bundling, leveraging, self-preferencing, most favoured nation clauses or anti-steering provisions, are worth monitoring to ensure competition in mobile payment services is not lessened. These practices mirror brick-and-mortar markets; however, digital markets' characteristics, such as flywheel ecosystem effects, may enable variations or new dimensions to potential exclusionary practices and their effects. Thus, in the same way that the interdependence between markets in an ecosystem or vertically integrated services may be crucial to the market definition analysis, identifying overarching anticompetitive strategies and their effects may be equally important in tackling exclusionary practices.
- **Collaborations** between incumbent payment providers. Joint initiatives between incumbent payment providers can promote scale, interoperability, and user benefits, but may also raise

competition concerns. These include risks of collusion, reduced rivalry, tying, bundling, leveraging, self-preferencing, and the exclusion of smaller or non-bank providers.

- **Interdependencies** between new entrants and incumbents. While partnerships may enhance efficiency and provide consumers access to new products and services, they may also introduce varying competition risks depending on the payment service provided in a relevant jurisdiction. Interdependence may also limit incentives to compete head-to-head, co-opt innovation, and may span multiple services.
- **Mergers and acquisitions**, including serial acquisitions. When assessing mergers and acquisitions, the characteristics of mobile payments should be considered in assessing both market definition and effects. Moreover, effects on related or adjacent markets should be examined.

127. Many pro-competitive initiatives may help address identified risks and foster competition in mobile payments. Significantly, while this paper limited itself to competition in mobile payment services, these initiatives may generally benefit society and the economy by fuelling broader payment or financial services competition and innovation.

128. Competition in mobile payments holds significant potential to enhance contestability, drive innovation, and improve mobile payment cost and quality. Notably, developing alternative retail-level payment rails and infrastructure supported by central banks can reduce reliance on traditional payment providers and foster financial inclusion. Implementing policies like open banking, data portability, and interoperability, assessing reciprocal data access obligations, or adopting targeted asymmetric regulations present further potential pro-competitive initiatives to level the playing field. These initiatives have enabled FinTechs and other entrants to offer competitive alternatives to the traditional mobile payment providers, contributing to lower costs and better customer experiences across jurisdictions. Key policy considerations in this context include:

- The level of competition in the relevant market may inform whether to opt for prescriptive or facilitative approaches to foster interoperability and open access to payment infrastructures among mobile payment service providers. For example, the level of competition may inform the need for more prescriptive approaches to address market failures (e.g., facilitating open banking, data portability, and interoperability) or facilitative approaches to stimulate market-led initiatives and ongoing competition.
- Timing and the level of competition should be considered when mandating interoperability and other similar initiatives. Imposing mandatory interoperability too early might disincentivise investment and potentially impede the development of a technology or market.
- Assessing whether mandating or encouraging reciprocal data sharing as part of open banking frameworks may provide relevant incentives for market-led initiatives or address the risks to competition from data asymmetries, where these are identified as a market failure and the source of a significant competitive advantage for certain mobile payment providers.
- When developing competing retail-level payment rails, public authorities may consider providing operational oversight and additional initiatives to ensure open access and broad adoption.
- Where market failures are present, such as entrenched market power or negative externalities, assessing whether competition enforcement, asymmetric regulations, or a combination of both, for example, to ensure access to key infrastructures for the provision of mobile payment services, may be required.

129. In sum, a well-calibrated combination of pro-competitive initiatives or regulations and timely competition enforcement that benefits from multi-stakeholder engagement across government is key to ensuring that mobile payment competition thrives while balancing policy objectives. It may also enable mobile payment services to deliver their full potential benefits to consumers, merchants, and the broader economy.

Endnotes

[1] Back-end wholesale foundational payment infrastructures, typically managed or overseen by central banks, are responsible for the interbank clearing and settlement of funds that finalise transactions initiated through front-end services. They include Real-Time Gross Settlement (RTGS) systems (e.g. TARGET2 in the EU, Fedwire in the US), automated clearing houses (ACH) for batch-based retail payments, and interbank messaging systems such as SWIFT, which is widely used for transmitting payment instructions in cross-border transactions. In contrast, bank and card networks, including four-party schemes, described as the "bank-centric" model in Section 1.2, function as retail-level payment rails in the middle layer that govern transaction routing, authentication standards, and interchange fee structures. These systems operate above foundational infrastructures and rely on them for the final interbank settlement of funds (World Bank, 2023[120]).

[2] Fintech refers to new entrants in the financial sector that offer financial technology (OECD, 2024[5]). BigTech refers to platform-based large technology companies with extensive customer networks and conglomerate business models across multiple markets (OECD, 2020[4]).

[3] For example, Alipay is a wallet that can be used for any purchase outside of Alibaba, but it is also integrated into Alibaba's e-commerce checkout as an embedded payment channel. Paypal operates multiple mobile payment channels, including an app, wallet, and embedded payment.

[4] Apple Pay and Google Pay are examples of pass-through mobile wallets.

[5] PayPal is both a staged and a pass-through mobile wallet, allowing users to choose which underlying instrument to rely on.

[6] For example, a camera API enables an app to interact with a device camera using QR codes.

[7] For example, secure elements are chips embedded in certain devices and used to store data on a mobile device or a SIM card. In turn, host card emulation (HCE) is a different configuration where the mobile payment provider stores sensitive payment information via tokens and cryptograms remotely, outside a mobile device, on a secure cloud. The latter requires a connection to the internet to access the relevant information.

[8] Proximity payments may also be enabled by Bluetooth Low Energy technology that uses a different frequency to the NFC wireless protocol on radio frequency waves to facilitate communication between devices. Magnetic stripe emulation, another alternative to NFC, constitutes Samsung's proprietary technology, which emulates the magnetic stripe of payment cards by generating a magnetic signal from a mobile device to a POS terminal. The solution was adopted to work with terminals that do not have NFC chips installed. However, since 2021, Samsung has started to phase out the magnetic stripe technology from its devices and Samsung Pay due to the growing adoption of NFC.

[9] A card network facilitates transactions between merchants and card issuers, which leads to interdependencies between mobile payment providers and card networks, as discussed in section 2.3. The incumbent international card network providers have long-held durable market power in many jurisdictions. Mastercard and Visa are incumbent card network providers in many jurisdictions. As of Q1 2024, the two companies account for an estimated 80% of all payment processing outside China (Statista, 2022[58]). For example, Google and Apple introduced their mobile payment services in 2011 and 2014, respectively, in partnership with Visa and Mastercard (FDCI, 2017[59]). More recently, Vipps MobilePay, which launched its alternative to Apple Pay on iPhone in 2024, partnered with Visa and Mastercard to offer mobile payment

services worldwide (Vipps, 2024[60]). As part of their cross-border expansion and to accommodate tourists visiting China, since 2023, WeChat and Alipay have separately partnered with Visa and Mastercard to offer mobile payment services.

[10] *Supra* at 1. Operating foundational settlement infrastructure also requires various ancillary services, including account identifiers and messaging standards (such as ISO 20022). These components ensure interoperability, accuracy, and security in interbank settlement. Messaging standards are discussed to some extent in Section 3.1.

[11] Some jurisdictions have adopted regulations limiting interchange fees, including after enforcement actions by competition authorities. For example, the EU Regulation (EU) 2015/751 of the European Parliament and of the Council of 29 April 2015 on interchange fees for card-based payment transactions sets caps on interchange fees.

[12] For example, in the US, Apple charges card issuers 0.15% on each credit transaction and half a penny ($0.005) on each debit transaction. In turn, Google Pay and Samsung Pay do not charge transaction fees to the card issuers. Instead, the fees are determined by the card network provider's standards instead of bilateral agreements with the wallet providers. While fees are one way Apple monetises, Apple Pay, wallet, or app providers also monetise through data collection enabled by consumers' use of the app or wallet (CFPB, 2023[56]). PayPal, in turn, charges a percentage fee ranging from 1.9% to 3.5% plus a fixed fee for transactions, which varies depending on the type of transaction and payment method used (PayPal, 2025[57]).

[13] Banks and card networks have several competitive advantages stemming from their historic payment monopoly (AdC, 2021[9]). Traditional payment providers benefit from an informational advantage in mobile payment services over new entrants, such as FinTechs, which are enabled by their proprietary databases on their clients. They also benefit from additional advantages, including high switching costs based on long-term client relationships and providing multiple services such as lending. Relatedly, they benefit from scope economies by offering various products to customers (Verdier, 2019[106]). Banks and card networks have conglomerate business models presenting flywheel ecosystem effects (Coeuré, 2025[24]). Moreover, in some jurisdictions, banks also benefit from regulatory barriers which prevent new entrants from offering mobile payment services without bank licenses (AdC, 2021[9]).

[14] Moreover, retail-level payment rails may offer limited value if the rails are not connected to a broad network of users and merchants. Payment processing is also scalable, with more transactions resulting in increased revenue, without proportional cost increases. Scalability, network effects and distribution advantages, amongst other competitive advantages held by card networks, have arguably sustained the incumbency of the leading card networks across many jurisdictions.

[15] For example, WeChat and Alipay's mobile payment services are free up to a certain transaction amount. However, both services charge merchants a percentage fee for the amount processed for purchases over a certain amount. Neither WeChat Pay nor Alipay depend on the payment fees for their earnings. Instead, they earn through customer retention and collection, including the accumulation and wide use of user data. MNOs typically differ in costs according to whether the payer and payer are within the same wireless network and dependent on the sum of the amount being sent. Fees and structures may also vary by jurisdiction.

[16] New payment rails and infrastructure are emerging, including central bank money and stablecoins based on distributed ledger technologies that are likely to impact competition in mobile payments (OECD, 2023[110]). For example, while this paper does not address central bank digital currencies (CBDCs), they are a similar initiative to fast payment systems, discussed in Section 3 (Duarte et al., 2022[16]). Generally, distributed ledger technology (DLT), particularly projects based on fiat currencies launched by central banks, may provide common interoperable platforms around which mobile payment ecosystems can

organise (Coeuré, 2025[24]). Blockchain is a DLT technology that could disrupt mobile payments by offering decentralisation, cost efficiency, and transparency. However, its adoption faces multiple challenges, including scalability and risks of financial exclusion. Today, most mobile payment systems rely on several intermediaries for mobile payments, which arguably increases fees and processing times. Blockchain, in turn, is decentralised, reducing reliance on intermediaries, which may reduce costs and processing times for mobile payments. Blockchain can theoretically settle transactions in seconds or minutes, depending on network congestion and consensus mechanisms (OECD, 2018[107]).

Cryptocurrencies play a central role in blockchain-based payment systems, acting as the primary medium of exchange in decentralised transactions. While many cryptocurrencies exhibit volatility, disincentivising their use in everyday payments, stablecoins, backed by fiat currencies, are increasingly being adopted. For example, PayPal launched a USD-backed stablecoin in 2023. Moreover, many jurisdictions are considering CBDCs, minted on blockchain and issued by the central banks, with fixed values equivalent to a jurisdiction's fiat currency. These initiatives hold a particularly relevant opportunity to improve cross-border payments, where traditional payment solutions are slow and costly due to the length of the payments chain, which has prompted G20 interest and a subsequent action plan (FSB, 2024[45]). However, CBDCs introduce fixed and variable production costs in accessing or running the relevant infrastructure and other challenges, including the potential for financial exclusion. Thus, jurisdictional context and applicability matter when adopting this innovation (CBK, 2022[87]).

Scalability remains a challenge. Public blockchains (e.g., Bitcoin and Ethereum) have experienced network congestion and high transaction fees, particularly during peak usage. Layer 2 scaling solutions (e.g., Lightning Network) and permissioned blockchains offer improvements, but widespread adoption and interoperability remain obstacles to achieving efficiency at scale. User experience remains a barrier, as blockchain-based payments often require technical literacy due to complex wallet management, private key security, and fluctuating transaction fees, which deter adoption and pose the risk of financial exclusion. The challenge of balancing decentralisation, security, and scalability means that increasing one of these factors can compromise another. Public blockchains prioritise decentralisation at the cost of transaction speed, while private blockchains optimise scalability but sacrifice transparency. Further, the success of blockchain-based payments depends on achieving network effects, which may be challenging given the current penetration of other forms of payments. Blockchain also relies on critical infrastructure that is costly to run, such as cloud computing. Regulatory ambiguity also constrains blockchain's competitive potential. Governments and financial regulators remain cautious about decentralised financial systems due to concerns over money laundering, consumer protection, and monetary policy implications. While regulatory sandboxes exist in some jurisdictions, a lack of standardised global regulatory frameworks makes compliance challenging for blockchain-based mobile payment services. In sum, the future of blockchain-based mobile payments will depend on balancing the opportunities and risks it presents, achieving regulatory clarity, improving scalability, and navigating costs and dependencies on critical infrastructures.

[17] For example, while this paper focuses on mobile payments, adjacent service offerings by mobile payment providers include Buy Now Pay Later (BNPL) lending services. BNPL services provide an alternative to traditional credit cards and bank-issued loans, often featuring more flexible or transparent terms. They cater to underbanked populations who may not qualify for conventional credit products but have access to mobile devices and mobile payments. BNPL is frequently embedded within mobile wallets or integrated into embedded payments and e-commerce platforms, enabling one-click purchases and deferred payments with minimal friction. This bundling of services can enhance user engagement while pressuring incumbent providers to deliver similarly integrated experiences. In other words, BNPL providers challenge incumbents in retail credit—banks and card networks—by offering point-of-sale financing with lower or no interest, fewer fees, and seamless digital experiences. Their presence can encourage traditional lenders to innovate, reduce fees, or enhance their digital offerings. BNPL may, however, also raise prudential

concerns, which are increasingly the focus of regulatory and enforcement scrutiny. Nevertheless, competitive BNPL offerings can complement the mobile payments ecosystem by expanding consumer options and introducing competitive pressure into traditional lending markets when properly regulated (OECD, 2024[109]).

[18] Newer entry by FinTechs and BigTechs in mobile payments presents a competitive threat to traditional payment providers through their technological efficiency and ability to reshape the customer relationship. For example, mobile payment providers that offer payment functions with communication, social networking, e-commerce, and other digital services can offer seamless, high-frequency interactions that generate richer customer data and enable tailored services. These integrated offerings can reduce consumer dependence on traditional banks or card networks, eroding the entrenched market power of incumbent providers over time. However, they may bring their separate competition risks, as discussed in Section 2.

[19] The multisided nature of payment markets creates a challenge for new entrants in attracting users and merchants simultaneously. This inherent dynamic makes it more difficult for a new entrant to gain traction where it does not already benefit from a captive user base. It also creates a competitive advantage for mobile payment providers with a strong and pre-existing user base in complementary or adjacent markets, leading to potential cross-sided network effects. The more users rely on mobile payments, the more valuable it is for merchants to accept them, and vice versa. Overcoming adoption challenges may also present an investment challenge for potential entrants.

[20] Gatekeepers of platforms or ecosystems hold quasi-irreplaceable access to consumers, as they act as intermediaries for transactions between interdependent groups of users and business users (including competing mobile payment providers) or as infrastructure for the development and provision of different yet interconnected products or services (Jacobides and Lianos, 2021[95]).

[21] Different protocols for sending text messages exist, including short message service (SMS), SIM Toolkit (STK), which is programmed on a device's SIM, and unstructured supplementary service data (USSD).

[22] The lack of regulation can also have chilling effects by creating legal uncertainty, thus representing a barrier to entry for mobile payment competition and innovation. In Mexico, while the 2018 FinTech Act laid the groundwork for Open Banking, the lack of clear regulations has limited the potential for innovation and growth in mobile payments. Enacting the FinTech Act set Mexico among the countries that promoted the mandatory adoption of Open Finance. However, its full implementation has not yet been accomplished due to the lack of secondary regulation, leaving a grey area disincentivising innovation. As the Federal Economic Competition Commission underscored in its 2024 market study of competition and free market access in digital financial services, the lack of secondary regulation impacts traditional payment providers and new and potential entrants' incentives (COFECE, 2024[105]).

[23] In this connection, competition authorities and regulators should remain alert to the risk of incumbents using justifications, such as security or prudential justifications, as a shield that protects their financial and business interests from competition.

[24] In 2018, due to an exclusive partnership agreement with WeChat Pay in China, Walmart reportedly stopped supporting Alipay's mobile payment option at checkouts (Fei, 2023[37]). In Kenya, the CAK found that Safaricom had abused its dominant position through exclusive dealing arrangements with agents, requiring them not to offer services to competing mobile payment providers. As a result, in 2014, it ordered Safaricom to expunge the restrictive clauses from its arrangements with agents (CAK, 2024[71]).

[25] For example, Swish is a broadly adopted Swedish mobile payments app. The Swish payment app started as a cooperation between six of the largest banks in Sweden and expanded as additional banks connected to Swish. Businesses can sign up for Swish through their bank if their bank is a partner. Similarly, Bizum is a Spanish mobile payment app owned by 23 Spanish banks. Eleven additional banks have affiliated with

the app. Depending if a bank has integrated with Bizum, it may be accessible for users through a mobile application or wallet (European Commission, 2024[10]).

[26] Many recent enforcement actions in digital markets have targeted these practices. These cases are not specific to mobile payment services but illustrate these broad concerns in digital markets. For example, in the EC's Google decision in 2018, the EC found that Google had engaged in anticompetitive tying and bundling practices, including requiring the mobile device manufacturers to pre-install Google Search and Google Chrome to license Google's app store. In the US, multiple lawsuits by the DOJ, State Attorneys General, and private plaintiffs, acting together or as separate groups, target similar concerns, and in 2024, several district courts found Google liable for this conduct. Similar actions have taken place or are ongoing across other jurisdictions. Relatedly, asymmetric digital regulations enacted across jurisdictions also target these practices, which affect mobile payment services.

[27] MFNs can discourage sellers or merchants from offering lower prices on competing platforms or direct channels, limiting their incentive to compete on price. Different types of MFNs may apply. For example, wide MFNs may prevent sellers from offering better prices anywhere else, including on their own websites or other platforms. Narrow MFNs may prevent better pricing only on the seller's own channel (Ezrachi, 2015[111]).

[28] For example, in Germany, the Bundeskartellamt has initiated proceedings against PayPal based on allegations that terms and conditions for merchants do not allow merchants to offer lower prices if a user chooses a different form of payment. The proceeding will also assess anti-steering rules, which have been the subject of attention by multiple competition enforcers in the context of payments (FCO, 2023[42]). Due to this previous broad enforcement, the Interchange Fee Regulation forbids anti-steering by payment card networks in the EU. Moreover, Article 5 (4) of the DMA prohibits digital gatekeepers from using several price and non-price anti-steering measures. Section 5(4) of the DMA states, "The gatekeeper shall allow business users, free of charge, to communicate and promote offers, including under different conditions, to end users acquired via its core platform service or through other channels, and to conclude contracts with those end users, regardless of whether, for that purpose, they use the core platform services of the gatekeeper."

[29] Previously, previous enforcement actions across jurisdictions challenged rules applicable to merchants who accepted Visa and MasterCard-branded cards. For example, the "honour-all-cards" rules required any merchant that accepts a Visa or Mastercard-branded credit card to accept all credit cards of that brand, regardless of the differences in interchange fees. Further, multiple rules prohibited merchants from influencing customers to use one type of payment over another, such as a credit card with a lower interchange fee, or cash rather than credit. These "anti-steering" rules included the "no-surcharge" and "no-discount" rules, prohibiting merchants from charging different prices at the point of sale depending on the means of payment.

[30] The USDOJ's 2010 settlement with Visa and Mastercard addressed merchant anti-steering rules restricting price competition. Although the U.S. Supreme Court later ruled in favour of American Express in 2018, emphasising the two-sided nature of card network markets, this decision did not affect the Visa and Mastercard settlements. In 2023, the Second Circuit upheld a merchant class action settlement against Visa and Mastercard, confirming that claims regarding inflated interchange fees and restrictive merchant rules remained valid and distinct from the Amex decision.

[31] Interdependencies may also foment systemic risks. Given that, as part of the partnership arrangement, banks are the regulated and supervised entity, this may present with limited oversight challenges over BigTech and FinTech firms.

[32] For the operation of its staged mobile payment offerings, PayPal requires banking licenses, money transmitter licenses, or equivalent licenses or permits across the jurisdictions where it offers these services. Users can add money to their staged PayPal account without using a bank account or payment card, including adding cash to their PayPal account at a select retail store or authorised merchant.

[33] When reviewing mergers related to mobile payments or in adjacent markets, competition authorities may consider the following issues, among others, that may come up based on the specific characteristics of a merger and the relevant market(s):

- Whether head-to-head actual competition or potential competition between mobile payment providers may be extinguished.
- Whether concentration may lead to coordinated effects among mobile payment providers.
- Whether any of the merging parties has access to key infrastructures for the provision of mobile payment services and whether the merger may affect the merged firms' incentives in providing access to these infrastructures or the degree and quality of access.
- The role of data asymmetries or the effect of data accumulation by mobile payment providers, including when assessing market power.
- The role of vertical integration or the expansion of multi-product ecosystems when assessing market power and the potential for flywheel ecosystem effects, including whether the merger may impact more than one market, including related or adjacent markets.
- The elimination of a nascent or potential competitor.
- The elimination of an internal innovation or continued research and development into an innovative service.
- The effect of a series of acquisitions by the merging parties.

[34] Many regulations adopted across jurisdictions and addressed in this Section include asymmetric obligations. As highlighted by the OECD in its Competitive Neutrality Toolkit, in some instances, it may be good practice to treat incumbents and smaller competitors or potential competitors differently to promote contestability. By imposing certain obligations on specific firms, usually incumbents with significant market power, the playing field may be levelled by promoting entry and preventing smaller competitors from being excluded from the market (OECD, 2024[28]). As underscored by the OECD's Recommendation on Competitive Neutrality, a key element to ensuring regulations remain pro-competitive includes continuous monitoring, including evaluating regulations through competition assessments and the ability to redesign, restructure, or withdraw a policy as needed. For regulation to remain pro-competitive, it requires regular review to prevent unnecessary restrictions on competition and ensure that the policy objectives remain justified, particularly in light of evolving market circumstances [OECD/LEGAL/0462]. Box 6 provides an example of an asymmetric regulation and its evolution.

[35] Harmonisation of APIs, as opposed to standardisation, refers to aligning different designs and structures across multiple APIs to improve consistency and make APIs more interoperable by reducing the complexity of integrating different APIs. Standardisation can be part of a harmonisation process. The latter goes beyond setting a standard set of rules; it aligns different systems more broadly to work together seamlessly (CPMI, 2024[46]).

[36] The OECD supports this work through the G20/OECD Task Force on Financial Consumer Protection, amongst other initiatives. For example, the G20/OECD High-Level Principles on Financial Consumer Protection address cross-border payments (OECD, 2022[8]).

[37] Other initiatives are underway in addition to the work undertaken by the G20. For example, trade initiatives such as the Digital Partnership Agreement (DEPA) between Chile, New Zealand and Singapore

include an article devoted to electronic payments, agreeing to promote APIs that promote interoperability and interlinking of payment infrastructures to encourage innovation and competition in the payment ecosystem (DEPA, 2020[65]).

[38] Several public and private operators have migrated to ISO 20022 messaging formats, which are international standards for messaging formats supporting interoperability and promoting switching. For example, the Central Bank of Kenya has adopted the ISO 0022 standard to promote further payment interoperability (Central Bank of Kenya, 2023[73]). Several operators have adopted additional enhancements inspired by these priorities, such as extended operating hours to speed up cross-border payments, reduce settlement risks, and improve liquidity management.

[39] Beyond open banking standards, many competition authorities and regulators have cooperated on QR code standards. While competition policy objectives often inspire interoperability measures, they can serve additional public interests, promoting financial inclusion and reducing systemic risks. For example, in 2022, the Central Reserve Bank of Peru (BCRP) issued the Payment Services Interoperability Regulation to enhance competition and foment greater financial inclusion by setting QR code standards and imposing interoperability obligations between digital wallets and other mobile payment providers. Interoperability has enabled improved competition through new entry and significant growth in the adoption of mobile payments by the overall population. In Kenya, QR codes are currently fragmented and lack mobile payment interoperability. Thus, in 2023, the CBK published QR code standards to promote interoperability for QR code standards across various mobile payment providers and increase financial inclusion and competition by facilitating the launch of innovative products.

[40] For example, Australia has instituted a Consumer Data Right legislation, allowing consumers to share data with any chosen service provider. Australia introduced the concept of reciprocity into open banking initiatives through the government's 2017 open banking review, aimed at assessing the most appropriate model for Australia. Ultimately, this resulted in implementing a Consumer Data Right (CDR) legislation for the banking sector with extensions to other industries. The Australian Competition and Consumer Commission (ACCC) is the lead regulator, with support from the Office of the Australian Information Commissioner (OAIC) (Sullivan, 2022[98]). Australia has empowered consumers to share their data with any chosen service provider (Colangelo and Khandelwal, 2025[91]).

In Canada, the Competition Bureau has recommended a standard API as part of the open banking framework to promote competition with reciprocal data access for specific data among providers (Competition Bureau Canada, 2024[66]). In Canada, the Canadian Government Department of Finance launched a consultation on Strengthening Competition in the Financial Sector (Government of Canada, 2023[67]). The Competition Bureau recommended specific pro-competitive measures for open banking success in this connection. Specifically, it recommended having an independent body supervise and enforce the open banking rules, adopting a single API technical standard to promote compatibility and interoperability between systems, and reciprocal access to in-scope data amongst participants in the framework (Competition Bureau Canada, 2024[66]).

[41] This includes Germany, the EU, Japan, and the UK. Additional jurisdictions, including Korea, Brazil, Australia, and India, are also considering adopting digital market regulations.

[42] For example, ex-ante regulation of digital markets (2021[26]), G7 inventory of new rules for digital markets: Updated inventory (2024[108]), Competition policy in digital markets: The combined effect of ex-ante and ex-post instruments in G7 Jurisdictions (2024[108]). In summary, part of the proposed rationale for these regulations is that competition enforcement may not be timely and effective in fast-evolving digital markets due to its backwards-looking nature. Moreover, some drivers of the problems are intrinsic, flowing from the characteristics of digital markets, and thus may not involve fault or abuse in all instances. Moreover,

regulation inspired by previous competition enforcement and providing clear obligations may potentially provide more effective and comprehensive forward-looking remedies.

[43] For example, the EU's DMA includes multiple provisions that may open competition in mobile payment services (European Commission, 2020[79]), (2023[49]).

Provisions addressing the risks of pre-installation or self-preferencing:

The DMA includes provisions to promote contestability, including addressing the risk of pre-installation or self-preferencing addressed in Section 2.2.2. For example, the DMA enables the uninstallation of pre-installed apps, allowing users to choose between mobile payment apps or wallets and not necessarily rely only on the offerings of mobile payment providers who are also OS or hardware providers.

- Article 6(3) specifies that the gatekeeper shall allow and technically enable end users to easily uninstall any software applications on the gatekeeper's operating system.

Provisions that address the risks of a lack of access or interoperability to key infrastructures:

The DMA includes multiple interoperability measures that can help facilitate the broader development and adoption of competing mobile payment apps and wallet providers. These measures may address the risk of lack of access to or interoperability of key infrastructures discussed in Section 2.1.3.

- Article 5(7) specifies that a gatekeeper cannot require end users or business users to also use, offer, or interoperate with the gatekeeper's payment service or other technical services that support the provision of payment services.
- Article 6(4) provides for the installation and effective use of third-party apps and app stores on the gatekeeper's OS.
- Article 6(7) provides that a gatekeeper must allow providers of services and hardware, free of charge, effective interoperability with the same hardware and software features accessed or controlled by the OS as are available to the services or hardware the gatekeeper provides. Moreover, providers of services offered with or in support of core platform services have to be allowed free and effective interoperability with the same hardware and software features, even if they are not part of the OS, as available to the gatekeeper.

NFC access, API functionality, and other key technology infrastructures for the provision of mobile payment services may fall within these interoperability measures as part of DMA Article 6(7)'s scope. The EC's Apple Mobile Payments and Germany's Section 58a PSSA, detailed in Box 3, inspired the adoption of Article 6(7). DMA Recital 56 underscores these key technologies specifically:

- "Gatekeepers can also have a dual role as developers of operating systems and device manufacturers, including any technical functionality such a device may have. For example, a gatekeeper that is a manufacturer of a device can restrict access to some of the functionalities in that device, such as near-field-communication technology, secure elements and processors, authentication mechanisms and the software used to operate those technologies, which can be required for the effective provision of a service provided together with, or in support of, the core platform service by the gatekeeper as well as by any potential third-party undertaking providing such service."

The DMA is not the only targeted ex-ante regime that requires access to operating system features. For example, Article 7 of the Japanese Smartphone Act similarly requires access to these features with the same level of performance available to the designated providers. Multiple similar proposals are under consideration across jurisdictions. Moreover, China's SAMR in 2021, released the draft "Guidelines for Implementing Subject Responsibilities on Internet Platforms." Article 3 of the proposed Guidelines states

that “superlarge” platform operators should ensure their services are interoperable with those that other platform operators offer (Fei, 2023[89]).

[44] For example, the DMA is not the only recent law concerned with using data to raise entry barriers or limit competition by denying or impeding the portability and interoperability of data. Section 19(a) of the German Competition Law expresses similar concerns.

[45] Importantly, given that these targeted asymmetric digital regulations are not applicable throughout jurisdictions, and to date, their implementation has had little extraterritorial effects, this may lead to (or further) the fragmentation of mobile payment offerings across jurisdictions (OECD, 2024[38]). Divergence may increase complexity for BigTech platforms, business users (including mobile payment competitors), and users with international exposure. New entrant business users may struggle to navigate complex platform rules that vary by jurisdiction, affecting innovation incentives. Thus, like with other regulations that aim to have pro-competitive effects, constant monitoring and tailoring are key to ensuring regulations effectively meet their objectives and respond to unintended consequences. Moreover, a heightened level of co-ordination amongst competition authorities and regulators is essential to help prevent risks flowing from increasing fragmentation. This will be particularly relevant as the number of cases in digital markets with varying remedies and digital market regulations’ obligations increases globally.

[46] For example, in Australia, the New Payments Platform (NPP), which is an open-access retail-level payment rail infrastructure for fast payments in Australia, was launched in 2018 through industry collaboration and the Reserve Bank of Australia. The European Union adopted the Instant Payments Regulation in 2024, aimed at accelerating the roll-out of instant payments in Europe and enabling non-bank payment service providers to access central bank-operated payment systems (ECB, 2024[84]). In parallel, European banks have pursued industry-led initiatives to disintermediate reliance on card networks. One such initiative is Wero, the digital wallet developed under the European Payments Initiative (EPI), which aims to provide a unified pan-European solution for instant payments.

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