

Annex 1 to Interim Report

Market review of scheme and processing fees

Competition with other
payment methods

May 2024

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Note: The places in this document where confidential material has been redacted are marked with a [✂]

Annex 1

Competition with other payment methods

Introduction

- 1.1** One potential source of competitive pressure on card schemes is competition with other payment methods. The availability of alternative payment methods (APMs) can put pressure on the scheme and processing fees charged to acquirers (and passed through to merchants) and/or incentivise card scheme operators to improve the quality of their services to acquirers and merchants, especially if merchants have the ability to influence the choice of payment methods used by customers at checkout. Assessing the strength of competition from other payment methods is therefore a key component of the competitive assessment of scheme and processing services.
- 1.2** This annex presents and analyses the evidence we have collected in relation to the competitive constraints imposed on Mastercard and Visa by other payment methods. The focus of this analysis is on the competitive constraints on the supply of Mastercard's and Visa's 'core' services (i.e., mandatory scheme services and other core processing services).
- 1.3** The main payment methods considered in this annex include digital wallets, Buy Now Pay Later (BNPL) solutions, open banking payments, cryptocurrencies and digital assets, and other card schemes. We also include some considerations on Direct Debit, standing orders, cash and cheques. These are all the payment methods mentioned in Mastercard's and Visa's submissions and in the internal documents they submitted in response to our information requests.
- 1.4** We aim at developing an assessment of the strength of the competitive constraints that Mastercard and Visa face from the payment methods listed above, both individually and collectively. Our analysis is not limited to the degree of competitive constraint APMs currently impose. As the competitive constraint may change over time, it's important also to consider the likely evolution of the competitive landscape in the next three to five years and how this affects (or could affect in the future) the degree of competitive constraint faced by Mastercard and Visa.
- 1.5** The annex is divided into eight sections:
- The first section briefly describes the evidence sources used for our analysis.
 - The second section describes the competitive landscape that Mastercard and Visa face and discusses evidence on competitive constraints that is not specific to a particular payment method.
 - Each of sections 3 to 8 focuses on evidence related to a specific category of payment methods – digital wallets (section 3); BNPL (section 4); real-time payments (RTP) and open banking payments (section 5); cryptocurrencies and digital assets (section 6); other card schemes; and Direct Debit (section 7), standing orders, cash and cheques (section 8).

Evidence sources

- 1.6** In assessing competitive pressure from APMs, we looked at a wide range of evidence that we considered in the round. This included:
- internal documents submitted by Mastercard and by Visa in response to information requests
 - other submissions by Mastercard and by Visa in response to information requests or to consultations
 - responses to information requests from operators of digital wallets and BNPL services
 - calls with payment initiation service providers (PISPs)
 - engagement with acquirers, including responses to information requests from acquirers
- 1.7** Our requests for internal documents from Mastercard and Visa were aimed at getting documents discussing the competitive landscape of scheme and processing services, and barriers to entry or expansion in the provision of these services. In response to our requests, Mastercard and Visa submitted 894 and 376 documents, respectively.¹
- 1.8** We recognise that internal documents may be produced by individual employees and that statements in the documents may not represent the corporate views of Mastercard or of Visa. Nevertheless, we consider that internal documents provide useful insights into the issues discussed within Mastercard and Visa and the competitive risks perceived, especially when the same views are expressed in multiple documents. We also recognise that views may change over time. In this annex, we note the year in which documents were produced; this allows us to map changes in the views expressed in the documents over time.² When considering the weight to place on internal document evidence, we have considered that evidence alongside all the other evidence that we have received.
- 1.9** We received responses to our information requests from the four largest operators of digital wallets and BNPL services in the UK:

1 From Mastercard, we asked for any presentations or reports prepared by or for, or received or sent by, any of the [X] 'senior custodians' they had identified between 1 January 2020 and 9 November 2022 which describe the competitive landscape for the provision of scheme and processing services to acquirers. From Visa, we asked for any documents created between 2017 and 9 November 2022 referring to the competition Visa faces in the provision of scheme and processing services to acquirers or alternative suppliers of those services.

2 While the case team have reviewed all the documents received, and found many of them to include relevant information, not all relevant documents are explicitly mentioned in this annex. In particular:

- In the case of many documents, the only relevant information was the indication of specific providers as competitors. We will not be referring to all the instances in which a particular provider is mentioned as a competitor.
- The same arguments were made, with identical or very similar words, in several documents. In the case of Mastercard, this issue was exacerbated by the presence of a large number of drafts of the same documents. In those cases, we will not be referring to all the documents in which a specific point is being made.
- This approach may result in a relatively small number of documents being referred to. This should not be seen as evidence of our analysis being based on a small number of documents but is a consequence of the approach described above.

- Apple and Google, which provide two popular pass-through wallets – Apple Pay³ and Google Pay
- PayPal, which provides the most used e-money wallet⁴
- [🔗] [a BNPL provider]

1.10 We held informal calls with five PISPs operating in the UK. Our selection included most of the PISPs that prominently appear in Mastercard’s and Visa’s internal documents, plus additional PISPs with which the PSR had previously engaged. We consider that this approach provided a good sample of the main PISPs operating in the UK, while keeping our information-gathering process manageable.

1.11 Finally, in the context of this market review, we have extensively engaged with acquirers. Our engagement with acquirers involved:

- Sending formal and informal written information requests to 18 acquirers.⁵ We received responses from 17 acquirers in total, accounting for 92% of Mastercard and Visa’s UK transactions (by value) in 2021.⁶
- Responses to the consultation on our draft Terms of Reference from acquirers.⁷
- Holding calls with three acquirers.
- Responses to our working paper on ‘Competitive constraints in card payment systems’ from acquirers.⁸ We received relevant written submissions from three acquirers, and 16 acquirers provided their views on the paper during a roundtable.

Competitive landscape

1.12 This section presents evidence on the competitive landscape that Mastercard and Visa face in relation to APMs, either when consumers and merchants decide which payment methods to adopt or accept, or when consumers make their payments. We also discuss evidence on competitive constraints from APMs that is not specific about individual types of payment method. The section is structured into four sub-sections:

- The first sub-section discusses the different types of competitor and different forms of competition faced by Mastercard and Visa, as identified in their respective internal documents.

3 Apple submitted that Apple Pay is not a pass-through wallet, but a technology that enables banks to offer secure contactless and e-commerce payments to their users. We have, however, included it in the category of pass-through wallets as, from a competitive assessment perspective, the constraint that Apple Pay may impose on Mastercard and Visa is analogous to pass-through wallets. [🔗].

4 Definition of pass-through wallets and e-money (or staged) wallets are provided in paragraph 1.82.

5 We selected the following acquirers to be recipients of our written requests: the 14 largest acquirers based on Mastercard’s and Visa’s transaction data (combined) for 2021; and four acquirers that newly entered the UK market in the past 10 years. The 14 largest acquirers received Section 81 notices; the four smaller acquirers received informal questionnaires.

6 Based on our analysis of Mastercard’s and Visa transaction’s data.

7 See also: [MR22/1.1: Stakeholder submissions on scheme and processing fees draft terms of reference | Payment Systems Regulator \(psr.org.uk\)](#).

8 See [MR22/1.4: Competitive constraints in card payment systems call for evidence | Payment Systems Regulator \(psr.org.uk\)](#).

- The second sub-section defines two types of competitive threat that APMs may impose: the threat of commoditisation (or brand disintermediation) and the threat of substitution (or rail disintermediation).
- The third sub-section discusses the evidence on the extent to which competition from APMs differs across different types of payment or payment environment.
- The fourth sub-section presents the evidence on the overall strength of competition from APMs, referring to Mastercard's and Visa's submissions, Mastercard's and Visa's internal documents, and acquirers' submissions.

Types of competitor and forms of competition

- 1.13** Visa told us that card payments networks face significant and growing competition from existing and potential alternative payment networks and methods. It noted that card payments from any scheme accounted for only a small proportion of total payment flows in the UK (approximately 13% in 2021), with payments using a Visa card accounting for an even smaller proportion (approximately 9% in 2021).⁹
- 1.14** Visa submitted that merchants and consumers can access a wide range of card payment schemes, open banking-enabled payments, real-time account-to-account ('A2A') payments, digital wallets (including PayPal, Revolut, Google Pay, Apple Pay and Samsung Pay), and BNPL services.¹⁰
- 1.15** Visa explained that the UK is a dynamic payments landscape with many providers which have entered and expanded innovative payment solutions for payment users.
- Visa told us that there are other card schemes which compete with Visa, including American Express, Diners Club, JCB, Mastercard and UnionPay, that these schemes are widely established and have wide acceptance networks, and that these providers are seeking to enhance their payment offerings in the UK.¹¹
 - Visa submitted that digital wallets, including PayPal, Revolut, Google Pay, Apple Pay and Samsung Pay, allow consumers to choose their preferred underlying funding source and are a competitive constraint. This is because the underlying payment method could be bank transfers, debit card, credit card, e-money, or gift cards. Moreover, BNPL services are growing alternatives for consumers and merchants.¹²
 - Visa told us that alternative payment service providers such as Broadcom, RSA and Falcon provide payment services which are constraints to Visa. Payment facilitators have developed payment acceptance solutions for acquirers offering functionalities such as payment data storage, tokenisation solutions, and fraud and risk management. Payment orchestrators such as Spreedly, IxoPay, ACI Worldline and Axerve offer merchants seamless connections to multiple payment solutions and providers through unified software which integrates front-end and back-end payment systems for merchants. Visa submitted that these services help merchants with management of payment processing and can replace aspects of Visa's products or allow more choice

9 Visa response to PSR working paper dated 23 February 2023 [🔗].

10 Visa response to PSR working paper dated 23 February 2023 [🔗]. Visa also mentioned payment facilitators and payment orchestration platforms; however, we do not consider these to be alternative payment methods.

11 Visa response to PSR questions dated 9 November 2022 [🔗].

12 Visa response to PSR questions dated 9 November 2022. [🔗].

of payment methods.¹³ We note, however, that these are not separate payment methods but services that allow merchants to access and manage a range of payment methods. For this reason, we are not discussing these services further in this annex.

- 1.16** Visa told us that this dynamic payments landscape obliges Visa to invest in several areas to ensure that it continues to be the chosen payment method by being convenient, fast, efficient and safe while delivering value for each transaction. Visa explained that it invests significantly in security, resilience, innovation, and in the payment experience.¹⁴
- 1.17** Visa said that merchants may choose not to accept certain payment options if they consider the benefits of accepting the payment do not outweigh the costs. Visa explained that merchants have the agency not to accept a payment and can nudge customers towards different payments that are better suited, so the costs to merchants are a constraint on Visa's price setting.¹⁵
- 1.18** Documents submitted by Visa confirm that it sees itself operating within a competitive landscape that includes multiple types of payment method. A Visa internal document dated June 2021 [REDACTED],¹⁶ [REDACTED].

Figure 1: Visa's competitive landscape

[REDACTED]

Source: [REDACTED].

- 1.19** Similarly, Mastercard told us that, in the UK, it competes against a wide range of payment methods. Mastercard explained that when it competes for the use of its cards, it does so for each transaction and against both other card schemes and a wide array of payment methods, including cash, Direct Debit, Faster Payments, BNPL, digital wallets and Open-Banking-enabled bank transfers.¹⁷
- 1.20** Mastercard told us that merchants can choose which payment method to accept and not accept – for example, many merchants only accept cash or bank transfer. Card schemes are therefore constrained by merchants who respond to price and quality and can choose not to accept a payment type or steer customers away from it.¹⁸
- 1.21** Mastercard's internal documents confirm that it sees itself competing against a wide range of payment methods. An internal document dated February 2022 [REDACTED].¹⁹ We note that [REDACTED].

Figure 2: Mastercard's taxonomy of competitors

[REDACTED]

Source: [REDACTED]

13 Visa response to PSR questions dated 9 November 2022. [REDACTED].

14 Visa response to PSR questions dated 9 November 2022. [REDACTED].

15 Visa response to PSR questions dated 12 January 2022. [REDACTED].

16 [REDACTED].

17 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

18 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

19 [REDACTED].

1.22 Mastercard submitted that one of the ways in which competition between providers can be assessed is by looking at front-end and back-end competition:

- a. front-end competition is downstream competition for access to the point of sale or point of interaction between merchant and consumer; and
- b. back-end competition is upstream competition between alternative payment rails.

1.23 Mastercard told us that front-end competition in payments can be of two types:

- The first is competition for the customer base, with providers competing to ensure that merchants accept their payment method, and that customers hold or have access to their payment method.
- The second is competition for the use of payment methods, where merchants and payment method providers try to influence consumer decisions about which payment method to use for each transaction.

1.24 Back-end competition, on the other hand, is competition for the underlying payment rails. For example, some payment services, such as BNPL and digital wallets, may allow their users to choose between different payment methods to fund their transactions.²⁰

1.25 Although the distinction is not always made explicit, Mastercard’s documents tend to reflect the two types of competition as described in Mastercard’s submissions – front-end and back-end. Figure 3 summarises the two types of competition and some of the payment methods involved.

Figure 3: Back-end and front-end competition

[✂]

Source: [✂]

Note: [✂]

Commoditisation, substitution and disintermediation

1.26 Our analysis considers two types of competitive risk: the risk of commoditisation and the risk of substitution. These risks are [✂]. We consider that the former is related to front-end competition, the latter to back-end competition.

1.27 A draft internal Mastercard document dated May 2022 [✂]:

- [✂].
- [✂].²¹

1.28 [✂]:

- [✂].
- [✂].²²

20 Mastercard response to PSR working paper dated 23 February 2023. [✂].

21 [✂].

22 [✂].

1.29 Mastercard's documents indicate [REDACTED]. For example, an internal document from 2021 [REDACTED]:

- [REDACTED]
- [REDACTED]²³

1.30 Other Mastercard documents [REDACTED].²⁴ In some cases, [REDACTED]. For example, an internal document dated January 2022 states that [REDACTED].²⁵ In some documents, [REDACTED].

1.31 Visa's documents also discuss two types of competitive threat, which are typically referred to as [REDACTED]. We interpret these as equivalent to the risk of substitution and the risk of commoditisation, respectively. Examples are discussed in paragraphs 1.108 to 1.112 below. However, [REDACTED], it is not always clear from the documents which risk is being referred to.

1.32 Mastercard submitted that commoditisation is an important competitive threat to its core services [REDACTED]. Mastercard told us that commoditisation is a direct concern because its strong brand means merchants and consumers understand that its payments will be safe and widely facilitated, and transactions will be enforced. [REDACTED].²⁶

1.33 We consider that, while both substitution and commoditisation risks are important from a business perspective, the risk of substitution is more relevant for our assessment of competition in 'core' services. Commoditisation may lead to a reduction in the schemes' profitability, as they would have a reduced role in the payment value chain; however, in the absence of alternative rails, commoditisation itself is unlikely to result in pressure to reduce mandatory fees, as acquirers and merchants would still have limited alternatives to card transactions. While, as submitted by Mastercard above, commoditisation may make merchants more willing to use alternatives to card transactions, their ability to do so would still depend on the availability of alternatives to card rails and, therefore, on the possibility of rail substitution.

Competitive constraints in different payment environments

1.34 The intensity of the competition that Mastercard and Visa face from other payment methods may vary across different payment types and payment environments. This was observed in submissions from Mastercard and in Mastercard's internal documents. This section discusses the evidence on this point and the implications of this for the way we assess the competitive constraints that Mastercard and Visa face.

1.35 We note that the evidence discussed in this section comes exclusively from Mastercard sources. While some of the considerations may apply to both Mastercard and Visa, we have limited direct evidence on how competition affects Visa in different payment environments.

23 [REDACTED].

24 [REDACTED].

25 [REDACTED].

26 Mastercard response to PSR working paper dated 8 December 2023. [REDACTED].

Mastercard's submissions

1.36 Mastercard told us that the payments landscape in the UK encompasses many different types of transaction, varying according to who is making or receiving the payment (including consumers, government and businesses), the value of the transaction, whether the transaction is in store or remote, the extent to which the payment is recurring, or the type of merchant sector.²⁷ For some types of transaction, Mastercard noted that cards are far from being the most common payment method and that a large number of transactions which could take place on cards currently are made through other payment methods (including cash, Direct Debit and Faster Payments). In particular, Mastercard noted that:

- In merchant segments where customers make regular repeat payments (such as utility bills, subscriptions, rental payments, charity donations), Direct Debit is a popular payment method, while bank transfers are widely used to pay trade professionals.
- For financial payments,²⁸ cards have only 5% of the overall payment volume, with bank transfers (direct debit) being those primarily used.
- For commercial payments (i.e., payments made between organisations), commercial cards account for only 14% of transactions and there are strong alternatives such as bank transfers, cheque and cash.
- For government/business-to-person payments most transactions are made using bank transfers.²⁹

1.37 The competitive landscape may therefore be different for different types of payment. Mastercard told us that some payment methods may only be used in specific segments, while others (such as cards) operate in a wider range of segments. As a result, in some segments, Mastercard stated that it will compete more closely with other card schemes and cash, whilst in other segments, Mastercard is directly competing with direct debit or bank transfers to grow its share of transactions.³⁰

1.38 Although direct competition with some APMs may be concentrated on specific payment types, Mastercard submitted that [REDACTED].³¹

Evidence from internal documents

1.39 That the intensity of competition with other payment methods may vary across different types of payment emerges also from Mastercard's internal documents. The documents, in particular, distinguish between Card Present and Card Not Present environments, and within the latter category between card on file, guest checkout and wallets.

1.40 There is some ambiguity across documents around the extent to which competitive constraints from APMs extend across both Card Present and Card Not Present environments.

27 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

28 Financial payments include transactions such as transferring money to a savings or ISA account or paying off part of a credit card balance (spontaneous financial payments) or mortgages, savings, investments, insurance, pensions, loans, and regular payments for credit card bills (regular financial payments).

29 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

30 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

31 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

- 1.41** An internal document dated September 2020 [REDACTED].^{32,33}
- 1.42** Other documents, however, [REDACTED].³⁴ An internal document dated August 2020 [REDACTED]:
- [REDACTED]
 - [REDACTED]
 - [REDACTED]³⁵
- 1.43** Some documents, moreover, [REDACTED]. For example, a draft internal document dated November 2020 [REDACTED].³⁶ [REDACTED].³⁷ [REDACTED].³⁸ [REDACTED].^{39,40}
- 1.44** An internal document dated 2022 refers to [REDACTED]. These actions are to ‘continue to ensure that contactless remains the best-in-class UX [user experience]’, ‘continue to extend activity with card issuers [...] and deployment of new acceptance solutions’, and ‘monitor innovation on A2A contactless and prepare responses’.⁴¹ We consider that the document indicates that, [REDACTED].
- 1.45** [REDACTED]. An internal document dated June 2022 [REDACTED].
- [REDACTED].⁴² [REDACTED].⁴³
 - [REDACTED].⁴⁴ [REDACTED].⁴⁵
- 1.46** [REDACTED], an internal document dated June 2022 observes that, [REDACTED]⁴⁶
- 1.47** Despite the varying picture about the strength of the competitive threat in different environments, what emerges from these documents is that the actions Mastercard envisages to respond to these threats are specific to each environment. For example, improving the checkout experience as a response to competition from wallets in online environments has no implications for the service provided in Card Present environments. The evidence, therefore, does not support Mastercard’s submission that the competitive constraints faced in one segment affect all the segments in which cards operate.

32 [REDACTED].

33 [REDACTED].

34 See, for example, [REDACTED].

35 [REDACTED].

36 [REDACTED].

37 [REDACTED].

38 [REDACTED].

39 [REDACTED].

40 Mastercard submitted that the content of this paragraph is inaccurate as the conclusions come from an early draft of an internal document (Mastercard response to PSR working paper dated 8 December 2023 [REDACTED]). However, Mastercard did not provide any other version of that document.

41 [REDACTED].

42 [REDACTED].

43 See, for example, [REDACTED].

44 [REDACTED].

45 See, for example, [REDACTED].

46 [REDACTED].

Overall strength of competition

1.48 Before analysing the competitive constraint imposed by different payment methods individually, this section considers the evidence that relates to the overall strength of competition faced by Mastercard and Visa. This includes submissions from Mastercard and Visa, our analysis of Mastercard's internal documents, and views expressed by acquirers.

Mastercard's submissions

1.49 In its submissions, Mastercard stressed the intensity of the competitive constraint from APMs, highlighting that the credible threat of entry and expansion of these payment methods is sufficient to constrain Mastercard even in the absence of changes in market shares.

1.50 Mastercard submitted that widespread entry and expansion of new payment providers is not required in order for Mastercard to be competitively constrained. This is because the credible threat of entry is sufficient to lead to relevant competitive constraints, even if the market shares of entrants are small. Mastercard told us that this is particularly the case in payments, as the economic characteristics of a two-sided network mean that there is a prospect of 'tipping' – that is, a rapid and substantial shift towards an APM. In particular, rapid switching to a new payment method can happen if this method offers substantial mutual advantages to merchants and customers when compared to rival payment methods, while the widespread multihoming behaviour in payments facilitates rapid switching and could cause a tipping effect.⁴⁷

1.51 Mastercard submitted that, because of the risk of tipping, incumbent payment platforms, such as Mastercard, need to compete on innovation, quality and pricing in order to maintain their market share. Mastercard further submitted this leads to positive competitive outcomes in the payments market without necessarily significant volatility in market shares.⁴⁸ In order for the threat of tipping to exist in contestable markets, Mastercard submitted that entry does not have to have occurred. Moreover, tipping can be very difficult to predict in advance, which means that Mastercard must constantly strive to be competitive against potential entrants.⁴⁹

1.52 That entry of new payment providers in the UK is a credible prospect is shown – Mastercard submitted – by recent examples of successful entry and expansion. For example, several providers of BNPL services have successfully entered and relatively quickly built up a customer base in the UK (Klarna's website says that it has a user base of 16 million shoppers in the UK). Digital wallet providers have also seen rapid growth in uptake and use, both online and in-store.⁵⁰ According to Mastercard, in recent years, the threat of entry has become even more real because barriers to entry have decreased as a result of technological changes and regulatory developments. In particular, while PayPal and Klarna have been successful in building their own systems, open banking now allows entrants to set up their own payment methods using interbank infrastructure at relatively low cost.⁵¹ Mastercard submitted that this has led to several entrants developing new

47 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED]. See also Mastercard response to PSR working paper dated 8 December 2023. [REDACTED].

48 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

49 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

50 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

51 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

payment methods using bank transfer infrastructure and open banking. Although the number of transactions for some of the new methods is currently still relatively small, these examples show that it is possible to enter with payment methods that compete with card schemes. Mastercard submitted that more established entrants (such as PayPal and BNPL providers) were small when they entered and have demonstrated that it is possible to attract consumers and merchants and drive widespread adoption.⁵²

1.53 Mastercard also told us about possible future developments which may impact UK payments.⁵³

- Mastercard said technological and regulatory changes have led to new providers and new competitive dynamics. One future development is in stablecoins and central bank digital currencies, which the Bank of England has consulted on as an alternative to card payments and other payments. This would be designed to promote innovation, choice and efficiency.
- Mastercard submitted that embedded finance⁵⁴ integrates financial products into new areas. This could create distance between the payment method and the final consumer, which could increase back-end competition as merchants have increasing ability to influence payment methods.
- Mastercard told us that big tech firms could disrupt the payments industry through both front-end competition with cards and back-end competition for funding methods. Mastercard said that big tech firms like Apple could develop in-house processing to utilise their large customer base, which could create new methods to make payments that are alternatives to card.

Visa's submissions

1.54 Visa told us that it expects competition in the UK payment landscape to intensify.⁵⁵

- Open banking has already enabled the entry and expansion of many providers and is forecasted to be used by 60% of the UK population by 2023.⁵⁶
- Visa said that the development of the UK payments landscape is expected to intensify further as the New Payments Architecture facilitates the expansion of account-to-account retail payments. The New Payments Architecture could strengthen innovation and competition between payment systems as well as payment solutions.
- Visa told us that HM Treasury and Bank of England initiatives could mean that a 'digital pound' is launched, which would be designed for everyday payments by households and businesses and would sit alongside cash.
- Visa told us that payment solutions providers like Revolut and Monzo, and big tech players like Amazon and Apple, have established consumer bases and are increasingly

52 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

53 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

54 Embedded finance is the integration of financial services directly into a business's products and services, via Application Programming Interface (API). This enables both financial and non-financial businesses to offer services like payments, banking, lending and insurance.

55 Visa response to PSR questions dated 9 November 2022. [REDACTED].

56 The latest Open Banking Impact Report (published in October 2023, with data covering the first six months of 2023) states that 10–11% of digitally-enabled consumers are estimated to be active users of at least one Open Banking service.

leveraging these to provide alternative payment solutions for payment users. For example, Apple has launched a BNPL offering in the US and a payment acceptance terminal that only uses the iPhone hardware, while Amazon has launched Amazon Pay Later.

1.55 Visa submitted that these future developments all pose competitive constraints, so Visa needs to continually innovate and provide value for money.

Evidence from internal documents

1.56 Mastercard documents are consistent with Mastercard's submissions above in relation to a perceived lowering of barriers to entry into the payments sector and increased competitive pressure from APMs. An internal document dated January 2022 comments on [REDACTED]. It notes that [REDACTED].⁵⁷

1.57 The same document mentioned in paragraph 1.21 summarises [REDACTED]:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED].⁵⁸

1.58 We note that many of the documents we reviewed discuss the competitive risks at the European or global level. However, [REDACTED]:

- [REDACTED].⁵⁹
- [REDACTED],⁶⁰ [REDACTED].⁶¹ [REDACTED].⁶²

1.59 An internal Mastercard document dated June 2022 [REDACTED].⁶³ [REDACTED]. It adds that [REDACTED].⁶⁴

1.60 In this respect, [REDACTED].⁶⁵

57 [REDACTED].

58 [REDACTED].

59 [REDACTED]. Mastercard submitted that the slide refers to the market opportunity represented by 'Click to Pay' (for a description, see paragraph 1.121 below) and not to Mastercard's wider business, and is not representative of Mastercard's broader view of its competitive challenges in the UK relative to other countries. Mastercard also submitted that it is unclear how the PSR has reached its conclusions about the degree of competition in the UK based on the information provided in the slide, as the document lack any commentary or explanation of what is meant by the symbols (Mastercard response to PSR working paper dated 8 December 2023 [REDACTED]). We note, however, that when competition is considered elsewhere in the same document, the reference is to Mastercard's wider business, with specific focus on e-commerce (see slide 3). We consider that slide 12 should be interpreted in a similar way and we note that, for each of the national markets indicated as having a more challenging competitive landscape, the slide identifies a digital wallet operating in that country. As for the interpretation of the symbols, while the lack of commentary does not allow us to reach a conclusion about the degree of competition in the UK, we consider that the symbols clearly imply that [REDACTED].

60 [REDACTED].

61 [REDACTED].

62 [REDACTED].

63 [REDACTED].

64 [REDACTED].

65 [REDACTED].

1.61 Nevertheless, several Mastercard documents indicate that [REDACTED]. An internal document from June 2022, [REDACTED].⁶⁶

1.62 [REDACTED],⁶⁷ [REDACTED],⁶⁸ [REDACTED],⁶⁹ [REDACTED],⁷⁰ [REDACTED],⁷¹ [REDACTED],⁷² [REDACTED]⁷³ [REDACTED],⁷⁴ [REDACTED]. In particular, a document dated October 2022 argues that [REDACTED].⁷⁵

1.63 What is never mentioned in the documents is any competitive pressure on mandatory fees on the acquiring side. On the contrary, one document explicitly talks of [REDACTED]. An internal document dated February 2020 states that [REDACTED].⁷⁶

Quantifying the risks

1.64 In several Mastercard documents, [REDACTED].

Figure 4: [REDACTED]

[REDACTED]

Source: [REDACTED].

1.65 When interpreting Mastercard's risk assessments, it is important to consider [REDACTED]. An internal document dated September 2021 includes [REDACTED]:

- [REDACTED].
- [REDACTED].⁷⁷
 - [REDACTED].
 - [REDACTED].
 - [REDACTED].^{78, 79}

1.66 When looking at competitive risks from APMs, it is important to take into account [REDACTED].⁸⁰ We recognise, however, that in an industry characterised by mostly fixed costs, [REDACTED].

1.67 Figure 5 below summarises the different competitive risks from APMs that are assessed in Mastercard's documents using the scale above. The rating is not always the same

66 [REDACTED].

67 [REDACTED].

68 [REDACTED].

69 [REDACTED].

70 [REDACTED].

71 [REDACTED].

72 [REDACTED].

73 [REDACTED].

74 [REDACTED].

75 [REDACTED].

76 [REDACTED].

77 [REDACTED].

78 [REDACTED].

79 In earlier documents, [REDACTED].

80 [REDACTED].

across documents. The figure uses, for each type of risk, the rating found in the most recent document.

Figure 5: Mastercard's assessment of competitive risks from other payment methods

[REDACTED].

Source: [REDACTED].

1.68 The risks in the figure are the following:

1. [REDACTED].
2. [REDACTED].
3. [REDACTED].
4. [REDACTED].
5. [REDACTED].

1.69 These risks are discussed individually in the sections of this annex that focus on specific categories of payment methods.

Evidence from acquirers

1.70 Acquirers' views are broadly consistent in indicating that the current competitive constraint on card rails is very limited. More uncertainty exists around the extent to which this risk may become more significant in future with the increasing adoption of non-card payment methods.

1.71 We asked acquirers if there are any payment methods for online/CNP transactions for which they necessarily have to offer acquiring services because otherwise they would lose/fail to acquire potential customers. Roughly two-thirds (12/17) referenced payment methods other than Mastercard and Visa in their answers. In particular:

- Seven of these acquirers indicated that the payment methods they referenced in their responses (which included other card schemes, digital wallets, BNPL and open banking) are substantially less important than Mastercard and Visa,⁸¹ e.g. because they are desired only by a certain merchant segment.⁸²
- One acquirer told us they must give their merchants access to as many payment methods as possible.⁸³
- Three acquirers felt that there are no such payment methods.⁸⁴

1.72 Two acquirers submitted that other payments must be offered more generally (i.e., not limited to online/card-not-present transactions).

81 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

82 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

83 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED] Another acquirer simply listed the payment methods that it provides merchants with access to (stakeholder response to PSR information request dated 11 January 2023. [REDACTED]).

84 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

1.73 We also asked acquirers to give us their assessments of the competition that Mastercard and Visa face from alternative card systems and APMs for online/card-not-present transactions.⁸⁵ We also asked them to explain whether, and if so how, the extent of competition has changed in the past five years.

1.74 Most acquirers that responded to this question (10/16) either highlighted the importance and popularity of Mastercard-branded and Visa-branded transactions,⁸⁶ or told us they believe that Mastercard and Visa face limited or no competition.⁸⁷ For example:

- One acquirer told us it ‘believes that Visa and Mastercard face minimal competition when looking at global payment processing volumes’.⁸⁸ Similarly, another acquirer commented that APMs tend to be focused on ‘domestic processing’ and are ‘not really comparable to global networks such as Visa and Mastercard’.⁸⁹
- Another acquirer noted that Mastercard and Visa transactions are ‘very popular in the UK and EU’ and that ‘currently there is no alternative to cards payments in usability and prevalence’.⁹⁰
- An acquirer submitted that Mastercard and Visa ‘still dominate the market in the UK’ and that they are both ‘considered by merchants to be the “must have” payment options’.⁹¹
- Another acquirer stated that ‘there are currently no scaled up, viable alternatives to Visa and Mastercard in the UK. It is not realistic for merchants in the UK to run their business without using such services’. The acquirer, however, told us it anticipates a considerable uptake in these alternative payment options and forecasts this to continue in the coming five years, while also noting that that the card schemes’ network rails can play an important part in some elements of the alternative payment ecosystem (e.g. funding a wallet, or BNPL instalments being paid with cards).⁹²

1.75 In a separate submission, one acquirer told us that other payment methods (such as American Express, BNPL and account-to-account payments) are ‘exclusively additional to Mastercard and Visa, not alternatives’.⁹³

1.76 Respondents noted a range of APMs in their responses, such as open banking or account-to-account payments, digital wallets and BNPL offerings. Respondents’ views on the competitive threat these present to Mastercard and Visa were mixed. We report acquirers’ views on each of these payment methods in further sections below. The following paragraphs present their views on how adoption of APMs is likely to evolve.

85 [REDACTED] Please provide your current assessment of the extent of competition Mastercard and Visa face from alternative card systems and alternative payment methods for online/CNP transactions including UK-EEA cross-border transactions (such as non-card-based payment methods). Explain whether and, if so, how the extent of the competition changed in the past five years. [REDACTED].

86 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

87 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

88 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

89 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

90 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

91 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

92 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

93 Stakeholder response to our working paper on ‘Competitive constraints in card payment systems’. [REDACTED].

- 1.77** Overall, some acquirers (4/17) told us that while Mastercard and Visa have historically accounted for a material proportion of transactions, card usage is expected to flatten in future while other payment methods are expected to continue to grow.⁹⁴ Roughly a third (6/17) noted the presence of these APMs but expressed more uncertainty as to whether they would continue to grow and what impact this would have on Mastercard's and Visa's positions in future.⁹⁵ Others (4/17) told us that Mastercard and Visa face limited competition or that they account for a material proportion of transactions, and did not express a view as to when or if this would change.⁹⁶
- 1.78** The uncertainty of future developments is also indicated in a publicly available document submitted by one acquirer. *The Global Payments Report* produced by Worldpay notes that in Europe e-commerce 'continues to shift toward APMs and away from cards'. However, it also notes that in the UK 'cards remain strong'. Outside of e-commerce (in the UK), the report predicts that 'cards will extend their dominance at the POS, with credit and debit combined expected to account for more than two-thirds of transaction value through 2025'.⁹⁷
- 1.79** In a separate submission, one acquirer also identified network effects and consumer habits as additional barriers to entry, submitting that these lend a first-mover advantage to Mastercard and Visa.⁹⁸ Another acquirer, however, told us that alternatives to card payments (such as account-to-account payments, stablecoins and central bank digital currencies) are emerging, and will act as constraints in future, although they are currently not sufficiently developed to be viable alternatives.⁹⁹ The acquirer added that competition from outside the card ecosystem will increasingly be a feature of the UK payments market.¹⁰⁰

Competitive constraints from digital wallets

- 1.80** This section presents the evidence we have received on the competitive constraint digital wallets pose to Mastercard's and Visa's cards in the UK. The evidence is organised in ten sub-sections:
- The first sub-section discusses how Mastercard and Visa categorise the different types of digital wallet.
 - The second sub-section presents evidence on market trends for digital wallets in Europe and in the UK, from Visa's internal documents.
 - The third sub-section discusses evidence from Mastercard's and Visa's internal documents on the competition they face from digital wallets, and reports the views expressed by acquirers responding to our information request.

94 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

95 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

96 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

97 The Global Payments Report can be downloaded from here. Another acquirer [REDACTED] submitted two publicly available reports written by PPRO: 'The next generation of UK digital payments'; and 'Payments and E-Commerce Report: Western and Central Europe'.

98 Stakeholder responses to our working paper on 'Competitive constraints in card payment systems'. [REDACTED].

99 Stakeholder responses to MR22/1.4 (23 February 2023), PSR working paper on competitive constraints in card payment systems. [REDACTED].

100 Stakeholder responses to MR22/1.1 (21 June 2022), PSR market review terms of reference. [REDACTED].

- The fourth sub-section considers Mastercard’s and Visa’s strategies to respond to the competitive threats from digital wallets, using evidence from their internal documents.
- the next five sub-sections consider evidence on competition from specific digital wallets – PayPal, Apple Pay, Google Pay, Amazon Pay, AliPay and WeChat Pay.
- The last sub-section presents a brief summary of the evidence.

Types of digital wallet

1.81 Mastercard’s and Visa’s internal documents provide information on the different types of digital wallet and the differences in the competitive constraints that Mastercard and Visa may face from each type of wallet.

1.82 A 2022 external report for Visa describes a wallet (or digital wallet) as [REDACTED].¹⁰¹ Wallets can virtually store credit/debit cards, e-money, boarding passes, gift coupons or ID cards. Digital wallets can be differentiated between pass-through wallets and e-money wallets.

- Pass-through wallets generally only pass on the data/tokens. The customer initiates the transaction using the wallet as an interface; the wallet forwards the payment information (stored as a token) to the issuer. The wallet does not store any money and funding is required from a card or bank account. Google Wallet and Apple Pay are examples of pass-through wallets.
- E-money wallets can store money and are involved in the flow of funds. Generally, both the customer and the merchant should hold an account at the respective wallet provider. The customer chooses to use a funding method or e-money stored on the wallet and the merchant receives the transaction value in its wallet. PayPal and Skrill are examples of e-money wallets.¹⁰²

1.83 As seen in Figure 1 above, Visa’s documents [REDACTED].

- [REDACTED].¹⁰³
- [REDACTED].¹⁰⁴

1.84 Mastercard’s documents provide [REDACTED].

Figure 6: Typologies of digital wallets

[REDACTED].

Source: [REDACTED]

1.85 [REDACTED].

- [REDACTED].¹⁰⁵ [REDACTED].
- [REDACTED].

101 [REDACTED].

102 [REDACTED].

103 [REDACTED]. We are not aware of any domestic wallet having a meaningful level of adoption in the UK.

104 [REDACTED].

105 [REDACTED].

1.86 [REDACTED]:

- [REDACTED].
- [REDACTED].
- [REDACTED].¹⁰⁶

Market trends

1.87 Visa's internal documents [REDACTED].

- An internal document dated 2020 [REDACTED].¹⁰⁷
- An internal document dated 2021 notes the [REDACTED].¹⁰⁸ An internal document dated April 2022 notes that, [REDACTED].¹⁰⁹ An internal document dated September 2022 reports [REDACTED].¹¹⁰

1.88 A 2022 external report for Visa states that, [REDACTED].¹¹¹ The report also indicates that, [REDACTED]. The report, [REDACTED].¹¹² [REDACTED], the report notes that [REDACTED].¹¹³

1.89 The same report explains [REDACTED]:

- [REDACTED].
- [REDACTED].¹¹⁴

Competitive constraints from digital wallets – evidence from Mastercard, Visa and acquirers

1.90 This sub-section presents evidence on the competitive constraint digital wallets impose on Mastercard and Visa as discussed in their respective internal documents and in acquirers' responses to our information request.

Mastercard's submissions

1.91 Mastercard told us that digital wallets impose both front-end and back-end competition (see paragraph 1.22). Digital wallets facilitate competition at the front end by enhancing the choices of payment method for consumers and merchants. Digital wallets enhance competition at the back end by offering a range of funding methods for users to choose from.¹¹⁵

106 [REDACTED].

107 [REDACTED].

108 [REDACTED].

109 [REDACTED].

110 [REDACTED].

111 [REDACTED].

112 [REDACTED].

113 [REDACTED].

114 [REDACTED].

115 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED]

- 1.92** Mastercard said that back-end competition was impacted strongly by digital wallets because digital wallets can store money, bank details and other payment methods. This means users have access to multiple payment methods in one wallet. Digital wallets can also internalise transactions whereby payments between different users of the wallet can be made without the intermediation of banks or card schemes, which can reduce transaction fees.¹¹⁶
- 1.93** Mastercard explained that wallets such as PayPal have allowed consumers to fund payments in multiple ways from one wallet.¹¹⁷ Mastercard said that PayPal (one of the largest digital wallet providers in the UK) allows the use of both cards and other payment methods. This means that PayPal will actively monitor the cost of facilitating different payment methods, and if Mastercard were to significantly raise its prices, PayPal would steer its customers towards using other methods to fund their payments. Mastercard told us that PayPal could successfully steer through use of new technology such as open banking. Mastercard also told us that PayPal’s product developments have made it increasingly possible for APMs to compete with Mastercard at the payment stage. This is because PayPal has developed a consumer protection offering, which means buyers can be more confident of the transaction even without using card payments.
- 1.94** Mastercard also said that front-end competition was impacted by digital wallets in two ways. Firstly, through competition for adoption, as payment method providers compete to ensure that consumers and merchants have access to their payment method. Secondly, through competition for the use of payment methods, by influencing consumers to choose a particular payment method at the point of a transaction.
- 1.95** Finally, Mastercard told us that other wallets such as Amazon Pay, Apple Pay and BNPL wallets are following a similar path to PayPal. With developments in open banking, it could become relatively quick for these wallets to add alternatives to card payments at the back end.¹¹⁸

Evidence from Mastercard’s documents

- 1.96** [REDACTED]. This is explained, for example, in an internal document dated September 2020, [REDACTED]. The document notes that [REDACTED]¹¹⁹
- 1.97** Similarly, an internal document from August 2020 [REDACTED]. On the other hand, [REDACTED]¹²⁰
- 1.98** An internal document dated November 2021 discussing [REDACTED]. It observes that [REDACTED]. It argues that [REDACTED].¹²¹ [REDACTED]:
- [REDACTED]
 - [REDACTED]
 - [REDACTED]¹²²

116 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED]

117 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED]

118 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED]

119 [REDACTED].

120 [REDACTED].

121 [REDACTED].

122 [REDACTED].

1.99 The document expands on [REDACTED]:

- [REDACTED].¹²³
- [REDACTED].¹²⁴

1.100 The document, however, also notes that [REDACTED]. More specifically:

- [REDACTED].
- [REDACTED].¹²⁵

1.101 An internal document dated September 2021, on the other hand, [REDACTED].¹²⁶ [REDACTED]:

- [REDACTED].
- [REDACTED].^{127, 128}

1.102 Further documents provide [REDACTED],¹²⁹ [REDACTED].

1.103 A draft internal document dated June 2022 [REDACTED]. The document [REDACTED].¹³⁰ [REDACTED]:

- [REDACTED]
- [REDACTED]¹³¹

1.104 A different draft of [REDACTED].¹³²

Visa's submissions

1.105 Visa told us that digital payment front-ends (like PayPal and Amazon Pay) own the consumer relationship for initiating payments.¹³³ Visa explained that consumers are increasingly choosing intermediaries, including digital wallet providers like PayPal, mobile digital wallet providers like Apple Pay and Amazon Pay, BNPL wallets and other digital wallets. Visa told us that these digital payment front-ends have multiple funding options – for example, PayPal have five different funding methods.¹³⁴

1.106 Visa told us that the combination of scale and optionality that digital payment front-ends have has significant impacts on market outcomes.¹³⁵ Firstly, digital payment front-ends have strong incentives to negotiate with the payment provider to reduce costs. Secondly, these providers can have strong bargaining power because of the large consumer base. Thirdly, providers can steer consumers to preferred funding methods. Fourthly, providers

123 [REDACTED].

124 [REDACTED].

125 [REDACTED].

126 [REDACTED].

127 [REDACTED].

128 An internal document dated July 2022 [REDACTED].

129 [REDACTED].

130 We note that [REDACTED].

131 [REDACTED].

132 [REDACTED].

133 Visa response to PSR questions dated 12 January 2022 [REDACTED].

134 Visa response to PSR questions dated 12 January 2022 [REDACTED].

135 Visa response to PSR questions dated 12 January 2022 [REDACTED].

can become PISPs, which would enable direct access to consumer bank accounts. Finally, providers may develop their own acceptance networks.

1.107 Visa told us that the growth of digital wallets means that consumers have access to multiple underlying payment methods and can easily switch between them without changing the front-end service they use. The use of digital wallets is also growing for in-person payments, and digital wallets now facilitate APMs in person as well as for card not present transactions.¹³⁶

Evidence from Visa's documents

1.108 Visa's documents also discuss [redacted] types of competitive threat from digital wallets: [redacted].

1.109 [redacted].¹³⁷

1.110 An external report dated 2022 prepared for Visa explains that [redacted].¹³⁸ An internal document dated April 2022 [redacted]¹³⁹ [redacted]. However, the document notes that, [redacted].¹⁴⁰

1.111 Finally, an internal Visa document dated June 2021 [redacted]. It notes that there is [redacted].¹⁴¹

1.112 [redacted] is explained in an external report dated 2022 prepared for Visa: [redacted].¹⁴² [redacted]:

- An internal document dated 2022 [redacted].¹⁴³
- An internal document dated April 2022 notes that [redacted].¹⁴⁴

Evidence from acquirers

1.113 One acquirer submitted that individual issuers, acquirers or merchants may not be able to refuse offering digital wallet services where these are provided by 'mobile device or mobile operating system providers with a high market penetration'.¹⁴⁵

1.114 When asked to give us their assessments of the competition that Mastercard and Visa face from alternative card systems and APMs for online/card-not-present transactions, roughly half of respondents (8/17) mentioned digital wallets such as PayPal, Google Pay and Apple Pay in their responses.¹⁴⁶

1.115 Views on the extent of the competitive threat to Mastercard and Visa from these suppliers were mixed:

- Six acquirers¹⁴⁷ highlighted that digital wallets rely on the Mastercard and Visa payment rails, with one acquirer describing these as a 'joint effort' with the card

136 Visa response to PSR questions dated 12 January 2022 [redacted].

137 [redacted].

138 [redacted].

139 [redacted].

140 [redacted].

141 [redacted].

142 [redacted].

143 [redacted].

144 [redacted].

145 Stakeholder responses to our Terms of Reference. [redacted].

146 Stakeholder response to PSR information request dated 11 January 2023. [redacted].

147 Stakeholder responses to PSR information request dated 11 January 2023. [redacted].

schemes¹⁴⁸ and another stating that the ‘one click convenience’ of using digital wallets such as Apple Pay and Google Pay advantages the schemes.¹⁴⁹ One noted that Apple Pay and Google Pay have led to the ‘significant growth of card payments in card-not-present environments’.¹⁵⁰ However, one of these acquirers explained that APMs are ‘changing the competitive landscape and could have the ability to steer consumers towards account-to-account payments potentially in the future, conditional on account-to-account payments adopting a commercial model that balances incentives in the two-sided market’.¹⁵¹

- One acquirer similarly noted that payment offerings provided by big tech companies, such as Google and Apple, are currently reliant on the card rails. However, the acquirer further noted that ‘if – as is expected – these payment methods will also offer (or move over entirely) to other rails such as bank transfers, this will significantly reduce the card share of the market’.¹⁵²
- A couple of acquirers told us that transactions made through digital wallets will continue to grow.¹⁵³

1.116 In a separate submission, one acquirer commented specifically on APMs that are reliant on the card rails, submitting that these cannot be considered constraints to Mastercard and Visa. The acquirer noted the possibility that such providers could switch away from using card rails in future and acknowledged such providers would be ‘well-placed’ to do so. However, the acquirer further submitted that this has not yet happened and the risk of this occurring is low as such firms ‘largely align themselves with the issuing side of the market to gain an instant source of revenue from the structure of the four-corner model’. As such, the acquirer stated they have little or no incentive to switch. Instead, the acquirer submitted that these payment methods reinforce the competitive position of Mastercard and Visa by increasing card use and are ‘an example of how the schemes leverage their bargaining power and ubiquity to ensure new payment services, even if innovative, don’t present any structural threat to the schemes’.¹⁵⁴

Mastercard’s and Visa’s digital wallet strategies

1.117 Mastercard’s and Visa’s internal documents discuss their respective strategies to respond to the competitive threats from digital wallets. [REDACTED].

Mastercard’s digital wallet strategy

1.118 The same internal document discussed in paragraph 1.101 looks at [REDACTED]. The document, however, [REDACTED].¹⁵⁵

148 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

149 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

150 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

151 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

152 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

153 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

154 Stakeholder response to our working paper on ‘Competitive constraints in card payment systems’.

155 [REDACTED].

- 1.119** [REDACTED].¹⁵⁶ [REDACTED].¹⁵⁷
- 1.120** [REDACTED].¹⁵⁸ [REDACTED].
- 1.121** [REDACTED].¹⁵⁹ [REDACTED].¹⁶⁰ [REDACTED].¹⁶¹ [REDACTED].¹⁶²
- 1.122** [REDACTED].¹⁶³ As noted in an internal draft document dated June 2022, [REDACTED].¹⁶⁴
- 1.123** According to another internal draft document dated June 2022, [REDACTED]. The draft document states that [REDACTED].¹⁶⁵
- 1.124** An internal document dated February 2022 lists [REDACTED].¹⁶⁶ [REDACTED].¹⁶⁷ An internal document dated May 2022 states that [REDACTED].¹⁶⁸
- 1.125** A draft internal document created in August 2021 discusses [REDACTED]. It states that [REDACTED].¹⁶⁹
- 1.126** Nevertheless, [REDACTED]. According to an internal document, [REDACTED].¹⁷⁰
- 1.127** Ultimately, as explained in a draft internal document from June 2022, [REDACTED].¹⁷¹ [REDACTED], a document dated December 2021 notes that [REDACTED]. In order to achieve this, [REDACTED].¹⁷²

Visa's digital wallet strategy

- 1.128** Visa's documents indicate [REDACTED]. An internal document dated December 2020 [REDACTED]:
- [REDACTED]
 - [REDACTED].¹⁷³
- 1.129** [REDACTED]. An internal document dated 2021 notes [REDACTED]. The document indicates that [REDACTED].¹⁷⁴ An internal document dated 2022 [REDACTED].¹⁷⁵

156 [REDACTED].
157 [REDACTED].
158 [REDACTED].
159 [REDACTED].
160 [REDACTED].
161 [REDACTED].
162 [REDACTED].
163 [REDACTED].
164 [REDACTED].
165 [REDACTED].
166 [REDACTED].
167 [REDACTED].
168 [REDACTED].
169 [REDACTED].
170 [REDACTED].
171 [REDACTED].
172 [REDACTED].
173 [REDACTED].
174 [REDACTED].
175 [REDACTED].

PayPal

- 1.130** In this and the following sub-sections, we review the evidence related to some of the largest digital wallets available in the UK. We start by looking at PayPal and considering publicly available evidence, evidence from Mastercard's and Visa's internal documents and from PayPal's response to our information request.
- 1.131** PayPal is the most widely used staged (or e-money) wallet in the UK. In 2022, PayPal was used for over [redacted] e-commerce transactions between a UK consumer and a UK merchant, plus over [redacted] further transactions between an EEA consumer and a UK merchant; their combined transaction value was above £[redacted].¹⁷⁶ This corresponds to less than [redacted]% of the £[redacted] billion value for CNP transactions processed by Mastercard and Visa in 2021.¹⁷⁷
- 1.132** In addition to debit, credit and prepaid cards, PayPal allows its customers to make payments using bank transfers, their existing PayPal balance or PayPal Credit (i.e., PayPal's BNPL solution). In 2022, non-card-based transactions accounted for approximately [redacted]% of the value and [redacted]% of the volume of transactions between UK consumers and UK merchants ([redacted]% if we also consider transactions between EEA consumers and UK merchants).¹⁷⁸ The proportion was higher for transactions involving EEA consumers, reflecting the greater popularity of bank transfers in some European countries, such as Germany.¹⁷⁹
- 1.133** It has been widely reported that PayPal has entered into agreements with Mastercard and Visa (both in the US and elsewhere, including Europe):
- In July 2016, PayPal signed US strategic partnerships with Visa. PayPal agreed to present Visa cards as a clear and equal payment option, and not to encourage Visa cardholders to link to a bank account. The agreement with Visa also included certain economic incentives and greater long-term Visa fee certainty.¹⁸⁰ In July 2017, the partnership between PayPal and Visa was extended to Europe.¹⁸¹
 - In September 2016, a US agreement was signed between PayPal and Mastercard.¹⁸² In October 2017, the agreement with Mastercard was similarly extended to Europe.¹⁸³
- 1.134** In submissions to us, Mastercard discussed [redacted].¹⁸⁴

Evidence from Mastercard's documents

- 1.135** [redacted].¹⁸⁵ [redacted].

176 Stakeholder response to PSR information request dated 21 July 2023. [redacted].

177 This value excludes transactions involving non-UK and non-EEA cardholders, as we do not have the corresponding value for PayPal.

178 Stakeholder response to PSR information request dated 21 July 2023. [redacted].

179 [redacted].

180 See [PayPal and Visa enter new partnership | Visa](#).

181 See [Visa and PayPal Extend Partnership to Europe | Business Wire](#).

182 See [PayPal and MasterCard End Fight With Agreement on Fees and Data – Bloomberg](#).

183 See [PayPal-Mastercard Deal Goes Global \(businessinsider.com\)](#).

184 Mastercard response to PSR working paper dated 23 February 2023. [redacted].

185 See, for example, [redacted].

1.136 [REDACTED].¹⁸⁶

1.137 An internal document dated September 2021 [REDACTED].¹⁸⁷ The document observes that [REDACTED].¹⁸⁸
[REDACTED].

- [REDACTED].
- [REDACTED].¹⁸⁹

1.138 The document concludes that, [REDACTED].¹⁹⁰

1.139 A later internal document from June 2022 considers the [REDACTED]. In particular, it notes that:

- [REDACTED].¹⁹¹
- [REDACTED].¹⁹²

1.140 However, the document also states that [REDACTED].¹⁹³

1.141 Nevertheless, the document concludes that [REDACTED].¹⁹⁴

Evidence from Visa's documents

1.142 An internal document dated 2017 explains [REDACTED].¹⁹⁵ [REDACTED]. Crucially, the document states that [REDACTED].¹⁹⁶

Evidence from PayPal

1.143 [REDACTED].¹⁹⁷ [REDACTED].¹⁹⁸ [REDACTED]:

- [REDACTED]
- [REDACTED].¹⁹⁹

1.144 [REDACTED].²⁰⁰

186 [REDACTED].

187 [REDACTED].

188 [REDACTED].

189 [REDACTED].

190 [REDACTED].

191 [REDACTED].

192 [REDACTED].

193 [REDACTED].

194 [REDACTED].

195 [REDACTED].

196 [REDACTED].

197 [REDACTED].

198 [REDACTED].

199 [REDACTED].

200 [REDACTED].

1.145 PayPal told us that [REDACTED].²⁰¹ PayPal’s website describes a hierarchy of default payment methods.²⁰² [REDACTED].²⁰³

1.146 [REDACTED].²⁰⁴ [REDACTED].²⁰⁵ [REDACTED].

Apple Pay

1.147 Apple Pay is a popular pass-through wallet in the UK.²⁰⁶ Currently, it can be used only for card-based payments.

1.148 However, Mastercard submitted that Apple Pay poses a risk of rail substitution. It noted that Apple has recently launched Apple Cash and ‘Tap to Pay’, which, in the near future, could be used together as a closed-loop payment method, processing transactions between consumers and merchants within the Apple ecosystem.²⁰⁷ Mastercard submitted that this is a longer-term threat, as Apple Pay would need to develop additional elements to operate without cards.²⁰⁸

1.149 In the following paragraphs, we consider the evidence on the competitive constraint Apple Pay imposes on cards from Mastercard’s internal documents²⁰⁹ and Apple’s response to our information request. The evidence indicates that in the short to medium term, Apple Pay is unlikely to pose a risk of rail substitution.

Evidence from Mastercard’s documents

1.150 [REDACTED]. An internal document from June 2022 [REDACTED].²¹⁰

1.151 The document observes that [REDACTED]. This, the document continues, [REDACTED].

1.152 However, the document notes that [REDACTED]. In particular, the document states that [REDACTED].

1.153 The conclusion the document reaches is [REDACTED].²¹¹

Evidence from Apple

1.154 Apple told us that [REDACTED]. As explained by Jennifer Bailey, Apple’s Vice President of Internet Services and Apple Pay: ‘We want to support what people already use and love. Consumers are already comfortable using their credit and debit cards that are supported

201 [REDACTED].

202 [What payment methods can I use with PayPal? | PayPal GB.](#)

203 [REDACTED].

204 [REDACTED].

205 [REDACTED].

206 On our classification of Apple Pay as a pass-through wallet, see footnote 3.

207 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

208 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

209 [REDACTED].

210 [REDACTED].

211 [REDACTED].

by the majority of merchants and banks. [...] Apple's role was simply to bring together the hardware, software and services to create the experience on the phone.'²¹² [REDACTED].²¹³

1.155 Apple told us that, [REDACTED].²¹⁴ Apple Pay technology [REDACTED].²¹⁵

1.156 Apple has also made significant investments in developing a range of technologies that can be used by financial institutions to facilitate the different payment methods they offer to their customers (including payments that use NFC, QR Code and Bluetooth technologies).²¹⁶ Apple told us that [REDACTED].²¹⁷

1.157 Apple told us that, [REDACTED].²¹⁸

Google Pay

1.158 Google Pay is another widely used pass-through wallet in the UK. As for Apple Pay, currently in the UK Google Pay can be used only for card-based payments.

1.159 [REDACTED].

1.160 Google told us that it is always evaluating the payment methods it supports within the Google Pay service as the payment ecosystem evolves. [REDACTED].²¹⁹

1.161 Google told us that [REDACTED].²²⁰

Amazon Pay

1.162 A further digital wallet discussed in Mastercard's documents is Amazon Pay. As seen in [REDACTED], Amazon Pay is included, like PayPal, in the group of staged wallets with global proprietary acceptance. However, [REDACTED] an internal document from June 2022. The assessment developed in that document [REDACTED].

1.163 The document observes that [REDACTED].²²¹

1.164 The document, however, argues that [REDACTED].²²²

1.165 Mastercard's response to this risk is [REDACTED].²²³

212 Quoted in Gupta, Sunil, Shelle Santana, and Margaret L. Rodriguez. "Apple Pay." Harvard Business School Case 516-027, August 2015. (Revised December 2016.)

213 Apple response to PSR information request dated 1 September 2023. [REDACTED].

214 Apple response to PSR information request dated 1 September 2023. [REDACTED].

215 Apple response to PSR information request dated 1 September 2023 [REDACTED].

216 Apple response to PSR information request dated 1 September 2023. [REDACTED].

217 Apple response to PSR information request dated 1 September 2023. [REDACTED].

218 Apple response to PSR information request dated 1 September 2023 [REDACTED]. We understand, however, that Apple charges a fee to issuers for transactions taking place through Apple Pay.

219 Google response to PSR information request dated 28 September 2023. [REDACTED].

220 Google response to PSR information request dated 28 September 2023. [REDACTED].

221 [REDACTED].

222 [REDACTED].

223 [REDACTED].

AliPay, WeChat Pay and other closed-loop payment systems

- 1.166** Several Mastercard’s internal documents mention [REDACTED].²²⁴ [REDACTED].²²⁵ [REDACTED].²²⁶
- 1.167** Visa’s documents mention AliPay and WeChat Pay as competitors. In particular, an internal document dated June 2019 [REDACTED].²²⁷
- 1.168** We understand that, outside of China, AliPay can only be used by people with a Chinese bank account.²²⁸ WeChat is also almost exclusively used by Chinese visitors. In the UK, therefore, these two digital wallets compete with Mastercard and Visa only for cross-border payments made by Chinese buyers.
- 1.169** In submissions to us, Visa also referred to Monzo and Revolut as two further closed-loop payment systems imposing a ‘potential competitive constraint’ on card schemes.²²⁹ We note that, in Visa’s internal documents, [REDACTED]. For example, an internal document dated 2019 notes [REDACTED].²³⁰ Another internal document dated 2019 includes, [REDACTED].²³¹ [REDACTED].

Summary of the evidence on digital wallets

- 1.170** Consistently with Mastercard’s and Visa’s submissions, the [REDACTED] internal documents devoted to discussing digital wallets indicates that Mastercard and Visa take the competitive threats from digital wallets seriously. However, the risk of commoditisation appears in the short term to be more significant than the risk of substitution. Moreover, the substitution risk appears less significant in the UK than in some other countries, given the absence of local A2A-oriented wallets.
- 1.171** Several documents indicate that [REDACTED].
- [REDACTED].
 - [REDACTED].
- 1.172** The evidence from acquirers is broadly consistent. Acquirers told us that digital wallets are at the moment mostly card-based. They do pose a risk of rail substitution in the longer term, but there is significant uncertainty over their incentive to move away from cards.
- 1.173** None of the pass-through wallet operators we have engaged with [REDACTED].²³² In the case of PayPal, non-card payments are currently used and account for a significant percentage of overall payments. However, PayPal has agreed with Mastercard and Visa not to steer customers towards using non-card payment methods, [REDACTED]. This limits the extent to which PayPal can pose a risk of rail substitution in the short to medium term.

224 [REDACTED].

225 [REDACTED].

226 [REDACTED].

227 [REDACTED].

228 See How to use Alipay as a foreigner (Both in and outside China) –Wise.

229 Visa response to PSR working paper dated 18 December 2023. [REDACTED].

230 [REDACTED].

231 [REDACTED].

232 [REDACTED].

Competitive constraint from Buy Now Pay Later (BNPL)

1.174 BNPL providers, also referred to as ‘alternative lenders’ (see Figure 2), are another category of market participants discussed [redacted] in Mastercard’s and [redacted] in Visa’s internal documents. This section presents the evidence we have received on the competitive constraint BNPL providers pose to Mastercard’s and Visa’s cards in the UK. The evidence is organised in five sub-sections:

- The first sub-section presents evidence on market trends for BNPL in Europe and in the UK, from Mastercard’s and Visa’s internal documents.
- The second sub-section discusses evidence from Mastercard’s and Visa’s submissions and internal documents on the competition they face from BNPL providers, and reports the views expressed by acquirers responding to our information request.
- The third sub-section considers Mastercard’s and Visa’s strategies to respond to the competitive threats from BNPL providers, using evidence from their internal documents.
- Sub-section four considers evidence on competition from a specific BNPL provider – [redacted].
- The last sub-section briefly summarises the evidence.

Market trends

1.175 A Mastercard internal document dated January 2022 indicates [redacted].²³³ Similarly, a 2022 external report for Visa [redacted]. The document states that [redacted].²³⁴

1.176 The same external report for Visa states that, [redacted].²³⁵ [redacted].²³⁶

1.177 The document [redacted].²³⁷

1.178 Visa’s documents also analyse the benefits of BNPL for consumers and merchants.

- An internal document dated 2020 states that the [redacted].²³⁸
- A 2022 external report for Visa [redacted].²³⁹ [redacted].²⁴⁰

233 [redacted].

234 [redacted].

235 [redacted].

236 [redacted].

237 [redacted].

238 [redacted].

239 [redacted].

240 [redacted].

Competitive constraints from BNPL – evidence from Mastercard, Visa and acquirers

1.179 This sub-section presents evidence on the competitive constraint BNPL providers impose on Mastercard and Visa as discussed in their respective submissions and internal documents and in acquirers' responses to our information request.

Mastercard and Visa submissions

1.180 Mastercard explained that several providers of BNPL services have successfully entered in competition with cards and built a customer base on both the consumer and merchant side. Mastercard told us that features such as convenience, low-cost credit and decreased cart abandonment appealed to merchants and consumers and drove the growth in usage. Mastercard explain that providers signed up large numbers of merchants through individual negotiations or using aggregators.

1.181 Mastercard told us that BNPL payments can be funded using bank transfers as well as card payment methods. Mastercard said that BNPL providers have developed their own credit-based payment methods as an alternative to cards, leading to merchants being offered a wider range of payment acceptance methods in both card-present and card-not-present payment situations.²⁴¹

1.182 Visa told us that the expansion of BNPL is an example of the UK being an innovative payment environment.²⁴² Visa noted that BNPL use has grown to serve around 1 in 8 people in the UK and is expected to be the fastest growing e-commerce payment method until 2025. Visa told us that technology players are increasingly leveraging their established customer relationships to provide alternative payment solutions, like BNPL, as direct competitors to Visa.²⁴³ Visa noted Apple Pay Later as an innovation which lets consumers pay merchants using BNPL with only iPhones and no further payment terminal. Amazon Pay Later also indicates similar direct consumer relationships.

Evidence from Mastercard's and Visa's documents

1.183 Several of Mastercard's internal documents observe [REDACTED]. A draft internal document dated January 2022 observes that [REDACTED]. The document, however, clarifies that [REDACTED].²⁴⁴

1.184 Documents recognise that [REDACTED]. However, an internal document dated June 2022 observes that [REDACTED].²⁴⁵

1.185 Some of Visa's documents [REDACTED]. The report states that [REDACTED].²⁴⁶

1.186 [REDACTED] Visa documents discuss the competitive threat from BNPL. For example:

- An internal document dated 2022 states that [REDACTED]²⁴⁷

241 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED]

242 Visa response to PSR questions dated 9 November 2022. [REDACTED]

243 Visa response to PSR questions dated 9 November 2022. [REDACTED].

244 [REDACTED].

245 [REDACTED].

246 [REDACTED].

247 [REDACTED].

- An internal document dated 2022 [REDACTED].²⁴⁸
- There are some mentions of [REDACTED].²⁴⁹

Evidence from acquirers

1.187 When asked to give us their assessments of the competition that Mastercard and Visa face from alternative card systems and APMs for online/card-not-present transactions, roughly a third of respondents (6/17) noted BNPL providers in their responses.²⁵⁰

1.188 Acquirers' comments on BNPL providers were mixed:

- Three respondents noted that BNPL providers are reliant on card rails.²⁵¹ However, one of these acquirers explained that APMs, including BNPL providers, are 'changing the competitive landscape and could have the ability to steer consumers towards account-to-account payments potentially in the future, conditional on account-to-account payments adopting a commercial model that balances incentives in the two-sided market'.²⁵²
- A couple of respondents noted that BNPL providers have grown strongly and are expected to continue to grow.²⁵³ One of these acquirers noted that this future growth will be reliant on new regulation being introduced.²⁵⁴ Similarly, two respondents also explained that card schemes are facing increased competition [REDACTED], including from BNPL providers.²⁵⁵
- One respondent told us that APMs such as BNPL remain a small part of the overall 'payments mix'.²⁵⁶

Mastercard's and Visa's BNPL strategies

1.189 Mastercard's internal documents discuss [REDACTED]. Visa's internal documents discuss [REDACTED].

1.190 Some documents specifically mention the threat that BNPL poses to credit cards in particular. A Mastercard draft internal document from January 2022 [REDACTED].²⁵⁷

1.191 An external presentation for Visa in 2022 states that [REDACTED].²⁵⁸ Visa's documents, [REDACTED].

1.192 A Visa internal document dated 2020 indicates that [REDACTED].²⁵⁹ [REDACTED].²⁶⁰

248 [REDACTED].

249 [REDACTED].

250 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

251 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

252 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

253 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

254 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

255 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

256 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

257 [REDACTED].

258 [REDACTED].

259 [REDACTED].

260 [REDACTED].

1.193 A Visa sales document dated 2022 [REDACTED]. The document [REDACTED].²⁶¹ The document [REDACTED].²⁶²

1.194 [REDACTED].²⁶³ A Mastercard internal document dated February 2022 describes [REDACTED]:

- [REDACTED]
- [REDACTED]
- [REDACTED].²⁶⁴

1.195 Mastercard, however, told us that [REDACTED].²⁶⁵

1.196 Visa's documents [REDACTED]. For example, a 2022 external report prepared for Visa [REDACTED].²⁶⁶

[REDACTED] [A BNPL provider]

1.197 In 2021, [REDACTED] payments [by this BNPL provider] involving a UK consumer and a UK merchant amounted to a total value of [REDACTED], with an additional [REDACTED].²⁶⁷ This corresponds to approximately [REDACTED]% of the value of domestic transactions processed by Mastercard and Visa in 2021 (or [REDACTED]% if we consider only credit card transactions).

1.198 [REDACTED] [The BNPL provider] allows its users to fund their purchases using either a debit card, a credit card, Direct Debit or bank transfers. [REDACTED]. In 2022, non-card payments accounted for [REDACTED]% of the overall transaction value of payments from UK or EEA consumers to UK merchants.²⁶⁸

1.199 [REDACTED].²⁶⁹

1.200 In relation to its BNPL service, [REDACTED].²⁷⁰ [REDACTED].²⁷¹

1.201 [REDACTED] [The BNPL provider] told us that [REDACTED].²⁷² [REDACTED].²⁷³

1.202 [REDACTED] [The BNPL provider] told us that it does not encourage the use of a specific payment method in the funding stage for consumers. Instead, it presents the available payment methods to the consumer, and then the consumer can select one of them as their preferred payment method. The next time the consumer tries to make a purchase, a pre-selected method will be chosen for them based on their previous preference. [REDACTED] [The BNPL provider] told us that it prioritises the choice of consumers and building long-term

261 [REDACTED].

262 [REDACTED].

263 [REDACTED].

264 [REDACTED].

265 Mastercard response to PSR working paper dated 8 December 2023. [REDACTED].

266 [REDACTED].

267 Stakeholder response to PSR information notice dated 20 July 2023. [REDACTED].

268 Stakeholder response to PSR information notice dated 20 July 2023. [REDACTED].

269 [REDACTED].

270 Stakeholder response to PSR information notice dated 20 July 2023. [REDACTED].

271 Stakeholder response to PSR information notice dated 20 July 2023. [REDACTED].

272 Stakeholder response to PSR information notice dated 20 July 2023. [REDACTED].

273 Stakeholder response to PSR information notice dated 20 July 2023. [REDACTED].

relationships with consumers, rather than trying to drive them towards a specific payment method.²⁷⁴ For the same reasons, [REDACTED].²⁷⁵

Summary of the evidence on BNPL

- 1.203** Our analysis of the evidence from internal documents indicates that [REDACTED]. Evidence from one BNPL provider, [REDACTED], shows that non-card payment methods constitute a large proportion of funding transactions in the UK, indicating that BNPL services do, to an extent, substitute card rails.
- 1.204** [REDACTED]. This suggests that [REDACTED] [the BNPL provider] has some bargaining power when dealing with Mastercard and Visa, and this results in some reduction in net fees.
- 1.205** However, BNPL still accounts for a relatively small volume of transactions, although they are expected to grow in the coming years. Internal documents also indicate that:
- So far, the growth of BNPL has been [REDACTED] (see paragraph 1.184)
 - [REDACTED] (see paragraph 1.199)
 - [REDACTED] (see paragraph 1.196)
- 1.206** The growth of BNPL has also sparked competition from Mastercard and Visa with the introduction of their own instalment products. [REDACTED] (see paragraph 1.192).

Competitive constraints from open banking payments

- 1.207** The third main category of APMs discussed in Mastercard's and Visa's documents, in addition to digital wallets and BNPL services, includes those methods variously referred to as open banking payments or real-time payments (RTPs). These are payment methods based on bank transfer (also referred to as account-to-account) rails. In this section, we will use the term open banking payments, unless we refer to specific internal document where different terms are used. This section presents the evidence we have received on the competitive constraint these payment methods pose to Mastercard's and Visa's cards in the UK. The evidence is organised in six sub-sections:
- The first sub-section presents evidence on market trends for open banking payments in Europe and in UK, from Mastercard's and Visa's submissions and internal documents.
 - The second sub-section discusses evidence from Mastercard's and Visa's internal documents on the competition they face from open banking payments providers, and reports the views expressed by acquirers responding to our information request.
 - The third sub-section considers Mastercard's and Visa's own activities and plans in open banking payments.
 - The fourth sub-section presents the evidence from calls with five PISPs operating in the UK in relation to the current extent of competition between open banking

274 Stakeholder response to PSR information notice dated 20 July 2023. [REDACTED].

275 Stakeholder response to PSR information notice dated 20 July 2023. [REDACTED].

payments and cards, the barriers to wider adoption of open banking payments, and the expectations on their evolution in the UK.

- The fifth sub-section summarises evidence on barriers to adoption of open banking payments from 'The Future Development of Open Banking in the UK' report for the Joint Regulatory Oversight Committee (JROC), published in February 2023.
- The last sub-section summarises the evidence.

Market trends

- 1.208** An external report dated 2022 prepared for Visa [REDACTED].²⁷⁶ The report states that [REDACTED]. The report explains that, [REDACTED].²⁷⁷
- 1.209** The same report states that open banking payments are [REDACTED].²⁷⁸ An internal document dated November 2022 reports that [REDACTED]. The presentation [REDACTED].²⁷⁹
- 1.210** Considering the competitive landscape for open banking in Europe, a Mastercard internal document from May 2022 [REDACTED]:
- [REDACTED]
 - [REDACTED]
 - [REDACTED].²⁸⁰
- 1.211** In terms of payment products, [REDACTED].²⁸¹

Competitive constraints from open banking – evidence from Mastercard, Visa and acquirers

- 1.212** This sub-section presents evidence on the competitive constraint open banking payments impose on Mastercard and Visa as discussed in their respective submissions, internal documents and in acquirers' responses to our information request.

Mastercard's submissions

- 1.213** Mastercard considers open banking to be an enabler of current and future entry of payment service providers.²⁸² Mastercard told us that open banking has made entry into the payment landscape significantly easier. Open banking has expanded as new entrants overcome the barriers to entry and have successfully used Faster Payments to develop new payment methods and build user bases of merchant and consumers. Mastercard told us that open banking expansion using non-sweeping variable recurring payments, will provide alternative payments to card-on-file payments and other repeat payments.²⁸³

276 [REDACTED].

277 [REDACTED].

278 [REDACTED].

279 [REDACTED].

280 [REDACTED].

281 [REDACTED].

282 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

283 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

1.214 Mastercard explained that some payment providers are removing the need for cards in transactions by using open banking. Mastercard told us that Klarna developed a payment product which uses open banking for instant payments. These payments come with consumer protections, which means that this offering is an alternative to cards. Mastercard also mentioned Super Payments, which has developed an innovative merchant experience which steers customers to the preferred payment method. Mastercard also submitted that open banking has allowed merchants to accept innovative payment methods, such as white-labelled products with account-to-account based payment methods.²⁸⁴

1.215 Mastercard told us that the payment providers using open banking are likely to expand their product range as their customer bases grow, which would increase competition with card payments.²⁸⁵

Evidence from Mastercard's documents

1.216 Mastercard's documents consider [REDACTED].

1.217 An internal document dated June 2022 considers [REDACTED].²⁸⁶ [REDACTED].²⁸⁷ We note that [REDACTED].

1.218 An internal document dated June 2022, considering [REDACTED]. However, it observes that [REDACTED].

1.219 Nevertheless, the document states, [REDACTED].²⁸⁸ In particular, an internal document from May 2022 notes that [REDACTED].²⁸⁹

1.220 An internal document from November 2022, [REDACTED].²⁹⁰ An October 2022 document, [REDACTED].²⁹¹

1.221 The internal document dated June 2022 discussed in paragraph 1.218 [REDACTED].²⁹² [REDACTED]. The document states that [REDACTED].²⁹³

Visa's submissions

1.222 Visa told us that open banking has enabled the entry and expansion of a wide variety of players in the UK and that the impact of open banking is expected to intensify.²⁹⁴ Visa said that developments of the account-to-account payment system infrastructure will potentially strengthen competition and innovation in payment solutions.

1.223 Visa told us that account-to-account payments have grown quickly in the UK as there is increased adoption by small- and medium-sized businesses.²⁹⁵ Visa told us that large merchants can now offer payment initiation service-enabled payments through closed-loop payment systems and that card issuers are investing in open banking payment capabilities.

284 Mastercard response to PSR working paper dated 23 February 2023 [REDACTED].

285 Mastercard response to PSR working paper dated 23 February 2023 [REDACTED].

286 [REDACTED].

287 [REDACTED].

288 [REDACTED].

289 [REDACTED].

290 Mastercard response to PSR working paper dated 1 December 2023. [REDACTED].

291 [REDACTED].

292 [REDACTED].

293 [REDACTED].

294 Visa response to PSR questions dated 9 November 2022. [REDACTED].

295 Visa response to PSR questions dated 9 November 2022. [REDACTED].

Visa also submitted that established card schemes, including American Express and UnionPay, are actively seeking to enhance their overall payment offering including by enabling open banking.²⁹⁶

1.224 Visa submitted that open banking payment initiation service providers are set to change the payment market. Visa said the development of payment infrastructure will introduce new payment capabilities which will improve quality and increase choice of payments. Visa mentioned VRPs²⁹⁷ and Request to Pay as examples of innovative payment methods that are offering more choice to payment users.²⁹⁸ Visa also noted that merchants such as HMRC have introduced open banking and are steering payers towards this option.²⁹⁹

Evidence from Visa's documents

1.225 Some documents suggest that [REDACTED].

- An internal document dated May 2022, [REDACTED]. It observes that [REDACTED].³⁰⁰ The document [REDACTED].³⁰¹
- An internal document dated May 2022 states that, [REDACTED].³⁰²

1.226 An internal document dated 2022 discusses the [REDACTED].³⁰³

1.227 Nevertheless, some documents [REDACTED].³⁰⁴ An external report dated 2022 prepared for Visa [REDACTED].³⁰⁵

1.228 Moreover, the same document discussed in paragraph 1.225 above [REDACTED].

- [REDACTED].
- [REDACTED].
- [REDACTED].³⁰⁶

1.229 Several of Visa's documents [REDACTED].³⁰⁷

296 Visa response to PSR questions dated 9 November 2022. [REDACTED].

297 A VRP is a mechanism to make one or more payments over a period of time using open banking. Sweeping payments are made between accounts controlled by the same account holder. Non-sweeping VRP refers therefore to recurring payments between accounts with different account holders, and can therefore be used to pay for goods or services.

298 Visa response to PSR questions dated 12 January 2022. [REDACTED].

299 Visa response to PSR questions dated 12 January 2022. [REDACTED].

300 [REDACTED].

301 [REDACTED].

302 [REDACTED].

303 [REDACTED].

304 See, for example, [REDACTED].

305 [REDACTED].

306 [REDACTED].

307 For example, [REDACTED].

1.230 While some documents indicate that [REDACTED]. An internal document dated 2022, [REDACTED].

- The document notes that [REDACTED]. The document notes that [REDACTED].
- [REDACTED].³⁰⁸

1.231 Similarly, an internal document dated March 2022 [REDACTED].³⁰⁹ [REDACTED], which the document illustrates [REDACTED].

- [REDACTED].
- [REDACTED].
- [REDACTED].³¹⁰

1.232 The document [REDACTED]. However, an internal document dated March 2022 [REDACTED].³¹¹

1.233 Consistent with this assessment, external reports prepared for Visa [REDACTED]. For example, a 2022 report prepared for Visa [REDACTED].³¹² The same report, [REDACTED].³¹³

1.234 Visa documents [REDACTED].

- An internal document dated 2022 [REDACTED].³¹⁴ [REDACTED].³¹⁵
- An internal document dated 2022 explained that [REDACTED]:
 1. [REDACTED].
 2. [REDACTED].
 3. [REDACTED].
 4. [REDACTED].
 5. [REDACTED].³¹⁶

1.235 Finally, an external report dated 2022, prepared for Visa, [REDACTED],³¹⁷ [REDACTED].³¹⁸

Evidence from acquirers

1.236 When asked to give us their assessments of the competition that Mastercard and Visa face from alternative card systems and APMs for online/card-not-present transactions, the majority of acquirers (11/17) noted open banking or account-to-account payments in their responses.³¹⁹

308 [REDACTED].

309 [REDACTED].

310 [REDACTED].

311 [REDACTED].

312 [REDACTED].

313 [REDACTED]. Similar points are also made in a 2021 external presentation prepared for Visa ([REDACTED]).

314 [REDACTED].

315 [REDACTED].

316 [REDACTED].

317 [REDACTED].

318 [REDACTED].

319 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

1.237 Most of these acquirers (8/11) highlighted the potential for such payment methods to grow and/or act as a potentially strong competitive threat in future. A couple of respondents considered that account-to-account payments will exhibit strong growth in future and did not comment on any barriers to this growth.³²⁰ Others, however, described various barriers to this growth. For example:

- Two acquirers explained that further regulation is required to help account-to-account payments grow.³²¹
- Four acquirers told us that account-to-account payments currently are limited in the product offering as compared to cards. For example, acquirers noted that account to account payments do not offer consumer protections or protections against fraud comparable to card,³²² do not offer consumers the same ‘one-click convenience’ as is provided through Google Pay or Apple Pay,³²³ and do not offer the same cross-border functionality.³²⁴ Despite observing the current limitations in the consumer protections offered by account-to-account payments, one of these acquirers stated in its response that open banking has brought about a ‘significant increase in competition’ and cited the Visa/Plaid merger decision, in which the CMA noted that there has already been some demand-side substitution between card and PIS payments.³²⁵
- One acquirer commented that regulation such as the ‘potential mandatory reimbursement regime on APP fraud’ may prevent growth in account-to-account payments as such regulation will increase friction and cost.³²⁶

1.238 One acquirer submitted an internally produced document showing evidence of competitive interaction between open banking and cards. The document discusses a planned increase in commercial interchange rates implemented by Visa, which is said to ‘materially impact’ certain clients ‘who are now actively evaluating non card alternatives, including open banking’.³²⁷

1.239 Finally, a couple of acquirers noted that issuers would lose revenue when transactions are made through alternatives like account-to-account payments and therefore they have little incentive to support alternatives to Mastercard and Visa. One acquirer indicated the ‘lack of industry coordination to enable convenient and seamless one-off payments using open banking A2A infrastructure’ as an example of this.³²⁸ Another acquirer submitted that a consequence of this is that change in the market will be driven either by large merchants (‘with a shift of the cost burden for payment systems moving from merchants to consumers’) or new intermediaries (such as digital wallet providers, which could increase consumer choice if these promoted the use of account-to-account payments, or decrease consumer choice if they simply replace Mastercard and Visa).³²⁹

320 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

321 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

322 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

323 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

324 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

325 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

326 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

327 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

328 Stakeholder responses to our working paper on ‘Competitive constraints in card payment systems’. [REDACTED].

329 Stakeholder responses to our working paper on ‘Competitive constraints in card payment systems’. [REDACTED].

Mastercard's and Visa's activities in open banking

1.240 Mastercard and Visa have been developing their own A2A solutions³³⁰ [REDACTED].

Mastercard's products and plans

1.241 Several documents discuss [REDACTED]. An internal document dated February 2022 [REDACTED]:

- [REDACTED]³³¹
- [REDACTED]³³²
- [REDACTED]³³³
- [REDACTED]³³⁴

1.242 [REDACTED].³³⁵ For example, a Faster Payments-based product Mastercard offers in the UK is Request to Pay (Bill Pay). An internal document dated June 2021 notes that [REDACTED].³³⁶

1.243 [REDACTED].³³⁷ In particular, a document on [REDACTED].³³⁸

1.244 In addition to [REDACTED], some documents discuss [REDACTED]. An internal document from May 2020 states that [REDACTED].³³⁹

Visa's products and plans

1.245 [REDACTED].

1.246 An internal document dated 2022 states that [REDACTED]. This document [REDACTED]. Moreover, [REDACTED].³⁴⁰

1.247 An internal document dated 2022 exploring [REDACTED].³⁴¹

1.248 An internal document dated 2021 [REDACTED].³⁴²

330 See Mastercard expands open banking reach with acquisition of Aiaa | Mastercard Newsroom and Visa Open Banking | Visa.

331 Send is Mastercard's service that enables secure, near real-time payment transfers to and from card, bank and digital accounts globally. Programme participants (such as banks, businesses and digital players) can use Send to make funds available to recipients almost instantly, domestically and cross-border (<https://developer.mastercard.com/product/mastercard-send/>). [REDACTED].

332 Cross-Border Services is a service allowing customers to send money internationally into bank accounts, cash-out locations, mobile wallets and cards. The service is marketed to banks, digital partners and non-banking financial institutions. Mastercard, Modernizing cross-border payments.

333 In the UK, Mastercard's Pay by Account service is named Pay by Bank app (PbBa) and is slightly different from the service offered by Mastercard in the rest of the world. It is a solution that leverages Faster Payments while providing debit-like scheme standards and protections. [REDACTED].

334 [REDACTED].

335 [REDACTED].

336 [REDACTED].

337 [REDACTED].

338 [REDACTED].

339 [REDACTED] This concept is discussed in greater detail in a document dated June 2022 ([REDACTED]).

340 [REDACTED].

341 [REDACTED].

342 [REDACTED].

Evidence from Payment Initiation Service Providers

1.249 This subsection summarises the views expressed in calls by five PISPs in relation to three themes: the current extent of competition between open banking payments and cards, the barriers to wider adoption of open banking payments, and the expectations on the evolution of open banking payments in the UK.

Current extent of competition with cards

1.250 The PISPs we talked to generally told us that, until now, open banking payments have competed with cards only to a limited extent and that, for some important use cases, the user experience of open banking is still not on a par with cards. Views were somewhat mixed on the type of transactions where open banking would be cheaper for merchants than cards.

Current use cases of open banking payments

1.251 So far, open banking payments have mainly addressed payment types where cards have had a limited presence, and have competed with cards in limited niches, such as in payments to high-risk merchants, to financial services or to utility suppliers.

1.252 One PISP told us that its current main use case is fund transfers, for example where users top up investment or savings accounts, or alternative current accounts. It explained that this payment type is an obvious use for open banking; it replaces manual bank transfer payments, which are inconvenient and can go wrong through inputting errors or through fraud.³⁴³

1.253 The PISPs identified specific types of merchants that currently constitute the most common adopters of open banking payments. In particular, one PISP explained to us that payments traditionally deemed higher risk by card processors (and therefore subject to higher fees) were a good fit for open banking. Open banking can de-risk these payments because every payment is subject to strong customer authentication. Additionally, open banking data can be used for identity verification purposes. Merchants with high transaction values are another vertical in which this PISP has customers.³⁴⁴

1.254 When asked what payment methods open banking payments were currently competing with, PISPs told us that, while in some niche segments open banking was potentially replacing card payments, their current offering did not allow them to compete with cards on a larger scale:

- One PISP told us that, for some customer types, it is competing with ad hoc card payments; for other customers, it is competing with card payments (both ad hoc and card-on-file) and bank transfers.³⁴⁵

343 Call with stakeholder [REDACTED].

344 Call with stakeholder [REDACTED].

345 The PISP explained that there is a non-financial benefit to using its open banking offer for this type of payments, because account reconciliation can be automated and does not need to rely on customers inputting the correct references. Call with stakeholder [REDACTED].

- Another PISP explained that, in most instances, its services likely substitute A2A or debit card transactions, although it is seeing customers build loyalty and reward solutions which might compete with credit cards.³⁴⁶
- A third PISP told us that, currently, its open banking payment initiation offering is being used to replace standard manual bank transfers or cash payments (such as payments to small businesses or memberships to clubs, or paying off credit cards/transfers to savings accounts). The PISP explained that it cannot currently build a product that addresses a wide range of use cases. This is primarily because of bank coverage and regulatory limitations.³⁴⁷
- Another PISP similarly stated that it cannot meaningfully compete with cards in the ways it would like to.³⁴⁸

The cost of open banking and card transactions

- 1.255** One important element of competition between open banking payments and card payments is the cost of the transaction. Most of the PISPs we talked to explained that open banking payments are cheaper than cards for higher-value transactions but become more expensive than cards for low-value ones.
- 1.256** One PISP explained that open banking can be uncompetitive at low payment values (due to relatively high acceptance costs of Faster Payments) and becomes more competitive as payment value increases. According to this PISP, [REDACTED] is roughly the point at which open banking starts becoming better value for merchants.³⁴⁹
- 1.257** The PISP told us that this is because open banking payments take place on the UK's Faster Payments infrastructure. Faster Payments are more expensive (at 1.9p) to send and receive than comparative payments, like SEPA instant in the EU (at 0.5p). Receiving banks also charge a premium for businesses to receive Faster Payments. This makes A2A payments uncompetitive with cards at low order values. Cards, the PISP explained, can settle more cheaply because they use batch-settlement systems; open banking, on the other hand, does not allow similar batch settlements. The PISP also expressed the concern that the New Payments Architecture could cost so much to build that it could increase the cost of instant payments.³⁵⁰
- 1.258** The uncompetitive cost of open banking for merchants in the case of low-value transactions is also implied by what other PISPs told us. Two PISPs told us that they charge between [REDACTED] per initiated payment, dependent on the volume of payments for the customer. The charge does not depend on the value of the transaction.³⁵¹ One of these PISPs told us that changes to the APP fraud liability structure could mean it would have to alter its price.³⁵² On top of these fees, banks charge merchants a flat fee for receiving Faster Payments into their business account. In some instances, merchants may be paying upwards of 60p to take a payment, which can be more expensive than card payments, especially for low transaction values. As a result, one PISP explained it tends to work with

346 Call with stakeholder [REDACTED].

347 Call with stakeholder [REDACTED].

348 Call with stakeholder [REDACTED].

349 Call with stakeholder [REDACTED].

350 Call with stakeholder [REDACTED].

351 Calls with stakeholders [REDACTED].

352 Call with stakeholder [REDACTED].

companies with higher transaction values, because in those cases the cost effectiveness of open banking is clearer.³⁵³

- 1.259** Another PISP, however, told us that its open banking offering would be cheaper than cards for merchants in most if not all payments, although at very low payment values the respective prices would be closer. It explained that, considering a typical card payment compared with single initiated open banking payments and excluding the cost of equivalent fraud protections, open banking would be 54% cheaper than card payments.³⁵⁴

Customer experience with open banking and card payments

- 1.260** In terms of customer experience, the way open banking and card payments compare varies across e-commerce, repeated, and in-person payments. In summary, open banking's user experience can be better than cards for e-commerce but is worse for repeated and in-person payments.
- 1.261** A PISP told us that open banking has a better user experience than cards for e-commerce payments. Since open banking was designed alongside PSD2³⁵⁵ implementation, Strong Customer Authentication (SCA) standards were incorporated into the original design. On the other hand, for cards, SCA and fraud protections are layered on top of payments by schemes and PSPs, which can lead to poor user experience as users must leave the e-commerce website, go to their banking app, and then return to the e-commerce website. This does not happen for open banking payments, where users are automatically directed to their banking app and then back to the merchant.³⁵⁶ A similar point was made by a second PISP, which however told us that this smooth user experience is dependent on banks doing their part. It explained that some banks have been adversarial towards open banking and have added extra layers of authentication that decrease user experience and conversion rate.³⁵⁷
- 1.262** For recurring payments, however, two PISPs explained that the card user experience for stored card details is currently better than open banking;³⁵⁸ one of them added that this is as a major gap in open banking's ability to compete with cards.³⁵⁹ The PISPs told us that non-sweeping VRP would reduce this barrier as payers would only have to authenticate once for many transactions.³⁶⁰
- 1.263** Finally, one PISP commented on the user experience for in-person payments, telling us that, whilst Open Banking VRP is restricted to sweeping, for low-value use cases, the user experience is not comparable with contactless payments on cards. This is because, until VRP is unrestricted from sweeping, single initiated payments must be authorised every time a payment is made, which adds friction to transactions. The PISP explained non-sweeping VRP would help overcome the hurdle.³⁶¹

353 Call with stakeholder [REDACTED].

354 Call with stakeholder [REDACTED].

355 PSD2 is the European Union's revised Payment Services Directive, which, among other measures, mandated the use of strong customer authentication solutions.

356 Call with stakeholder [REDACTED].

357 Call with stakeholder [REDACTED].

358 Calls with stakeholders [REDACTED].

359 Call with stakeholder [REDACTED].

360 Calls with stakeholders [REDACTED].

361 Call with stakeholder [REDACTED].

Barriers to wider adoption of open banking payments

- 1.264** Two PISPs told us that, currently, the main barrier to the wider adoption of open banking payments is the position of banks when dealing with PISPs.³⁶²
- 1.265** Banks control access to the accounts and data of their customers. Given that an open banking solution would be attractive to merchants only if it enables payments from most consumers, irrespective of their bank, PISPs are not in a position to negotiate with individual banks by playing one against the other. Moreover, as currently banks generate revenue, in the form of interchange fees, from their customers' use of cards, they have no incentive voluntarily to facilitate non-sweeping VRP if they do not recover the lost interchange revenue. However, according to one PISP, if Account Servicing Payment Service Provider (ASPSPs)³⁶³ charge Open Banking providers as much as the card interchange fee for access to that bank's APIs, the PISP would have no viable business model to compete with cards, since merchants would not make a sufficiently large saving by choosing Open Banking to justify their investment in the infrastructure.³⁶⁴
- 1.266** Both PISPs considered that a regulatory intervention will be needed.³⁶⁵ In particular, one PISP told us that it believes regulatory intervention will be required to ensure that there is broad market coverage and that pricing is set substantively lower than debit interchange fees, adding that these two issues are key if VRPs are to compete with cards in future.³⁶⁶
- 1.267** Finally, a third PISP told us that open banking could compete against all payments but is currently limited by low customer awareness of how open banking payments work. In relation to competition with cards, the PISP also noted that cards facilitate a lot of benefits to cardholders, such as points, cashback and chargebacks, which open banking cannot currently offer.³⁶⁷

Expected evolution of open banking payments

- 1.268** All the PISPs we talked to told us that they plan to grow their business in the next few years. However, they also said that effective competition with cards will take time and is subject to appropriate regulatory interventions.
- 1.269** One PISP told us that it is increasing its focus on 'powering up' low-risk purchases, which could start to compete with cards, focusing on merchants such as grocery stores, delivery companies and ride hail companies. For these businesses, cards work well but there are still some areas where open banking can provide benefits that go beyond cards; [REDACTED].³⁶⁸
- 1.270** Another PISP told us that its goal is to build a product that can compete with cards (through VRP).³⁶⁹ Similarly, a further PISP explained that if it were able to cost effectively access bank APIs to provide Open Banking VRP beyond the sweeping use case, it could

362 Call with stakeholders [REDACTED].

363 An ASPSP is any financial institution that offers a payment account with online access. This includes banks and building societies.

364 Call with stakeholder [REDACTED].

365 Calls with stakeholders [REDACTED].

366 Call with stakeholder [REDACTED].

367 Call with stakeholder [REDACTED].

368 [REDACTED]. Call with stakeholder [REDACTED].

369 Call with stakeholder [REDACTED].

compete with continuous payment authority card-on-file payments and, in some instances, Direct Debit payments.³⁷⁰

1.271 However, two PISPs told us that currently there is uncertainty on how regulators will move forward on open banking, and that PISPs need market certainty to make investments into the appropriate areas.³⁷¹

1.272 One of these PISPs further explained that, although there is regulatory uncertainty, based on what is known, it will likely take at least a couple of years to produce an open banking product which can compete with cards. This is because the current timeline for commercial VRP is to have pilots in mid- to late 2024 for low-risk use cases. Time will then be needed for testing and learnings, and only then can a product be released. After that, there will be work to do to achieve merchant and consumer adoption. While the PISP hopes to make strides towards a product that competes against cards in the meantime, there are lots of factors which limit this, including the need for regulatory interventions.³⁷²

Barriers to adoption of open banking payments from the February 2023 JROC report

1.273 The report for the Joint Regulatory Oversight Committee (JROC) on The Future Development of Open Banking in the UK, published in February 2023,³⁷³ presents a detailed analysis of barriers to expansion of open banking payments. It also sets out possible actions that can unlock the potential of open banking payments and includes an expected timescale.

1.274 The assessment was based on 'strategy sprints' conducted by an expert panel composed of representatives from all the types of participants in the open banking payment ecosystem, including banks, PISPs, digital wallet providers and merchant associations.³⁷⁴ General submissions from the full range of open banking participants were also invited. Two rounds of 'sprints' were conducted. The first focused on identifying potential gaps between the current state of the open banking ecosystem and a more optimal state in the future. The second aimed, among other things, at identifying what activities should be prioritised and what actors should play what kind of role in operationalising the priority issues. Overall, in the first sprint round, 26 submissions were received from panel members and 17 from other open banking participants; in the second sprint round, there were 20 submissions from panel members and nine from other industry participants.³⁷⁵

1.275 Given the extent of the engagement with industry participants that informed the JROC report, we consider it to provide an extensive assessment of barriers to adoption of open banking payments in the UK.

370 Call with stakeholder [REDACTED].

371 Calls with stakeholders [REDACTED].

372 Call with stakeholder [REDACTED].

373 Open Banking Strategic Working Group Secretariat (openbanking.org.uk), 'The Future Development of Open Banking in the UK', February 2023.

374 A full list of panel members is included at page 193 of the report.

375 See page 31 of the report.

Barriers to adoption

- 1.276** Summarising the results of the analysis, the report identifies specific barriers to adoption of open banking payments. In particular, the report states that barriers to adoption by merchants include:³⁷⁶
- Functional gaps – There is a need to enhance the level of certainty as to whether the payment was executed, the status of the payment or why it had failed.
 - Performance – The levels of payment conversion, reliability and resilience need to be higher to enable more payments use-cases to be viable
 - Asymmetry of costs and incentives within the ecosystem – This is considered a fundamental impediment to the expansion of open banking payments into areas such as e-commerce, broader account-to-account retail transactions (A2ART) and non-sweeping variable recurring payments (VRPs).
- 1.277** The report explains that the misalignment of incentives and end-user (payee or merchant) costs 'led many stakeholders to express scepticism about the widespread extension of open banking payments to the full range of use-cases, especially A2ARTs'.³⁷⁷ Submissions from stakeholders were clear about the implication of this misalignment on the development of new use-cases and on the possibility of open banking payments competing with cards.
- Some Third Party Providers (TPPs)³⁷⁸ submitted that the high cost of inbound Faster Payments could make low-value payments using open banking uneconomic to accept compared with cards.
 - One large TPP stated that it was not confident there was an economic arrangement for non-sweeping VRPs that could compensate banks for lost card revenue (interchange and scheme rebates) while delivering savings for merchants. Several TPPs mentioned that in bilateral contract discussions, some banks were asking for fees higher than current debit card interchange fees, meaning that the business case to merchants would not stand up.
 - Three large ASPSPs questioned whether there was a business case for further investment in open banking payments at all. Similarly, one independent expert and a trade association commented that the existence of debit card interchange coupled with the no-surcharging rule meant that there was no case for ASPSPs to invest in ACH-based payment types as competitors to cards.
- 1.278** The report states that this negative viewpoint was not shared by all stakeholders. Several ASPSPs and one TPP observed the low level of market maturity of open banking payments and submitted that it takes time for markets to stabilise, mature and innovate. A TPP also submitted that open banking payments may be competing not with cards but with inter-bank transfers, where they would bring benefits to both payers and payees.³⁷⁹

376 See page 34 of the report.

377 JROC report, page 50.

378 TPPs are organisations that use APIs to access customer's accounts, in order to provide account information services and/or to initiate payments. In the context of payments, the main role of a TPP is as Payment Initiation Service Provider (PISP).

379 JROC report, page 51.

1.279 Summarising this evidence, the report states that ‘at present there are limited commercial incentives to support the wholesale extension of open banking’.³⁸⁰ In particular, there are ‘mis-aligned incentives around the expansion of open banking payments to support ecommerce. Provision of open banking payments as a viable ecommerce payment option represents a market expansion opportunity for TPPs, but for ASPSPs it would potentially cannibalise existing interchange revenue streams and add costs if there is a need to handle more payment disputes. Given the downside risk for ASPSPs, there is a limited investment case to improve open banking system performance and functionality beyond the regulatory requirements.’³⁸¹

Future developments

1.280 The report sets out possible actions to unlock the potential of open banking payments, listing them under three timescales – short term (i.e., could start immediately and might have a short-term impact; time period 12–18 months), medium term (i.e., could be dependent on the short-term activity, or more complex in nature to deliver; time period 18–36 months) and long term (i.e., has external dependencies or implementation will be beyond 36 months).³⁸²

1.281 In terms of new use cases for open banking payments, the only short-term priority identified in the report is to ‘evaluate the use of VRPs in low-risk sectors’,³⁸³ such as government or utility payments. These are use cases where open banking payments would compete mainly with Direct Debit and only to a limited extent with cards. The development of ‘scalable VRPs schemes’, which would compete more broadly with ‘card on file’ payments, is included in the report among the long-term priorities.³⁸⁴ This reflects the view, shared by most stakeholders, that any longer-term expansion would require some form of intervention in terms of a regulatory mandate, a multilateral agreement (MLA) or regulatory actions on pricing (e.g., a price cap) and liability model. Only a minority of stakeholders considered that the market would solve such issues in time. There was therefore wide agreement that the current commercial realities are unlikely to lead to the expansion of VRPs in the short term.³⁸⁵

1.282 An e-commerce scheme (or A2ART) is also placed in the report among the long-term priorities. The report observes that ‘many respondents wrote and spoke about the need for open banking payments to provide an alternative method for paying for goods and services, in particular online. Others, including some TPPs, saw open banking payments’ extension and expansion into e-commerce and POS retail transactions being a relatively low priority area for now.’³⁸⁶ The development of solutions for POS transactions is not even explicitly mentioned among the long-term priorities.

380 JROC report, page 13.

381 JROC report, page 13.

382 JROC report, page 15.

383 JROC report, page 16.

384 JROC report, page 18.

385 JROC report, page 37.

386 JROC report, page 18.

1.283 Overall, the report indicates the presence of very significant barriers to wider adoption of open banking payments, especially for use cases where competition with cards would take place, and the existence of significant doubts around the ability of the market to overcome these barriers. The actions suggested by the report suggest that open banking payments are unlikely to impose a significant constraint on cards for either e-commerce or in-person retail transactions for at least the next three years, and significant uncertainty exists on when or whether such constraint will emerge, at least without regulatory intervention.

Summary of the evidence on open banking payments

1.284 [REDACTED].

1.285 Moreover, in one Visa document [REDACTED].³⁸⁷ [REDACTED].

1.286 Evidence from other sources is consistent with what emerges from internal documents. Submissions by the five PISPs we engaged with indicate that open banking payments have so far competed with cards only in limited niches. Based on current cost structures, open banking is more expensive than cards for low-value transactions. Moreover, in terms of user experience, open banking transactions can work well in e-commerce but currently not for repeated or in-person payments. This is broadly consistent with the views expressed by acquirers, which noted some degree of competition between cards and open banking payments but highlighted several limitations of these payments compared to cards.

1.287 The JROC report indicates the existence of significant barriers to the wider adoption of open banking payments in the UK. The misalignment of incentives between the different participants in the open banking ecosystem led many stakeholders to express scepticism about the widespread extension of open banking payments, especially in retail transactions, where competition with cards would be more direct. Even the more positive views expressed by some stakeholders implied that competition with card payments was not expected in the short term, as those stakeholders mentioned either competition with inter-bank transfers or the need to wait for the ecosystem to mature. View on barriers to expansion of open banking payments expressed by the five PISPs we engaged with were consistent with this assessment. These PISPs submitted that the main barrier is the strong bargaining position of banks when dealing with PISPs and their lack of incentive to facilitate open banking transactions.

1.288 Despite these barriers, both the JROC report and the five PISPs expect open banking payments to become more widespread in the future. There is however a consensus among stakeholders on the view that this will be a gradual process, starting from a limited range of low-risk transaction, and subject to significant uncertainty. Even with proper regulatory intervention to mandate the major banks to facilitate A2A payments, many stakeholders consider that it will take a few years for effective competition with cards to emerge.

387 [REDACTED]. We note that the document [REDACTED]. The documents we have reviewed [REDACTED].

Competitive constraints from cryptocurrencies and digital assets

1.289 Cryptocurrencies and digital assets are considered by Mastercard and Visa as part of the competitive landscape it faces (see their submissions summarised in paragraphs 1.53 and 1.54). This short section is divided in three subsections:

- The first subsection considers evidence from Mastercard’s internal documents, in relation to both competitive threats and opportunities coming from cryptocurrencies and digital assets.³⁸⁸
- The second subsection presents the views expressed by acquirers responding to our information request
- The last subsection summarises the evidence.

Evidence from Mastercard’s documents

1.290 Documents indicate that [REDACTED].³⁸⁹

1.291 An internal document from February 2020 [REDACTED].³⁹⁰

1.292 An internal document from September 2020 [REDACTED].

- [REDACTED].
- [REDACTED].
- [REDACTED].
- [REDACTED].³⁹¹

1.293 An internal document dated November 2021 states that [REDACTED].³⁹² More specifically, an internal document from June 2022 [REDACTED]:

- [REDACTED].
- [REDACTED].
- [REDACTED].³⁹³

1.294 The same document, however, observes that [REDACTED].³⁹⁴

1.295 [REDACTED].³⁹⁵

388 [REDACTED].

389 [REDACTED].

390 [REDACTED].

391 [REDACTED].

392 [REDACTED].

393 [REDACTED].

394 [REDACTED].

395 [REDACTED].

1.296 An internal document from June 2022 notes that [REDACTED].³⁹⁶ Another document from June 2022 [REDACTED].³⁹⁷ In particular, the document [REDACTED]:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED].³⁹⁸

1.297 Mastercard's aim is to [REDACTED].³⁹⁹

Evidence from acquirers

1.298 When asked to give us their assessments of the competition that Mastercard and Visa face from alternative card systems and APMs for online/card-not-present transactions, only a couple of acquirers referenced cryptocurrencies in their responses.

1.299 However, these acquirers explained that cryptocurrencies are limited in their ability to compete with Mastercard and Visa due to high volatility⁴⁰⁰ and low levels of consumer trust resulting from a lack of regulation.⁴⁰¹

Summary of the evidence on cryptocurrencies and digital assets

1.300 Consistently with submissions by Mastercard and Visa, evidence from Mastercard's internal documents indicates that [REDACTED].

Competitive constraints from third-party card schemes

1.301 This section considers the evidence we have collected on the competitive constraint Mastercard and Visa face from other card schemes on the acquirer/merchant side.⁴⁰²

1.302 This section is divided in three subsections:

- The first subsection presents data on use of cards from schemes other than Mastercard and Visa in the UK.
- The second subsection considers evidence from Mastercard's and Visa's submissions and internal documents, and the views expressed by acquirers responding to our information request
- The last subsection summarises the evidence.

396 [REDACTED].

397 [REDACTED].

398 [REDACTED].

399 [REDACTED].

400 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

401 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

402 Competition between Mastercard and Visa, and with other card schemes on the issuer side is considered in Annex 5.

Transaction values

1.303 We received data from Mastercard, Visa, American Express, Discover and JCB on their respective value of UK card transactions in the years 2018 to 2021.⁴⁰³ Figure 7 shows these schemes' shares of card transaction value based on this data.

Figure 7: Shares of UK card transaction values (2018–2021)

[REDACTED].

Source: PSR analysis of data from Visa, Mastercard and other card schemes operating in the UK in response to PSR questions dated 21 November 2022, 23 November 2022 and 11 January 2023 respectively. [REDACTED]. [REDACTED]. [REDACTED]. UK transactions defined as any transactions involving a UK cardholder, a UK merchant, or both.

1.304 As shown in the figure, Discover and JCB had minimal transaction volumes, collectively accounting for a share of [REDACTED]. American Express accounted for [REDACTED]. Mastercard's shares [REDACTED], and Visa's shares [REDACTED].

1.305 As American Express only provides credit cards, its share of transaction value is larger if we only consider credit cards. Ignoring Discover and JCB, Figure 8 shows the shares of credit card transaction value for Mastercard, Visa and American Express.

Figure 8: Shares of UK credit card transaction values (2018–2021)

[REDACTED].

Source: PSR analysis of data from Visa, Mastercard, and American Express. [REDACTED]. [REDACTED]. [REDACTED]. UK transactions defined as any transactions involving a UK cardholder, a UK merchant, or both.

1.306 When focusing on credit card transactions, American Express accounted for [REDACTED] of the overall transaction value during the 2018–2021 period. Mastercard accounted for a share of transaction value [REDACTED], while Visa [REDACTED].

Competitive constraints from other card schemes – evidence from Mastercard, Visa and acquirers

Mastercard's and Visa's submissions

1.307 Mastercard submitted that American Express is a strong competitor, with a large presence in specific payment segments.⁴⁰⁴ Mastercard also explained that the other card schemes it competes with include Visa, Discovery and JCB.⁴⁰⁵ Mastercard said [REDACTED].⁴⁰⁶

403 We have been unable to get similar data from UnionPay.

404 Mastercard response to PSR consultation dated June 2022. [REDACTED].

405 Mastercard response to response to PSR questions dated 9 November 2022. [REDACTED].

406 Mastercard response to PSR questions dated 12 January 2022. [REDACTED].

1.308 Visa told us that a variety of card schemes such as American Express, Diners Club, JCB, and UnionPay are widely accepted in the UK and have been actively seeking to enhance their overall payment offerings with innovation.⁴⁰⁷ Visa submitted that other card schemes are providing competitive constraint as consumers can directly choose additional payment networks (particularly for credit cards) to hold, with each different payment network offering different services and value propositions to consumers.⁴⁰⁸ Visa also told us that merchants can choose whether to accept alternative card schemes such as American Express; merchants choose their portfolio of payment options depending on what they value between different options (such as cost, speed of onboarding, security, fraud, analytics, dispute resolution, trust, and confidence).⁴⁰⁹

Evidence from Mastercard's and Visa's documents

1.309 [REDACTED]. Competition with domestic card schemes is discussed in several documents, but is not relevant to the UK context, as no domestic scheme operates in the UK.

1.310 A Mastercard internal document dated September 2020 states that [REDACTED].⁴¹⁰

1.311 [REDACTED].⁴¹¹ An internal document dated November 2022 [REDACTED].⁴¹² Visa's documents [REDACTED]⁴¹³ [REDACTED].⁴¹⁴

1.312 An internal Mastercard document from February 2022 notes that [REDACTED].⁴¹⁵

1.313 [REDACTED].⁴¹⁶ For example, an internal Visa document dated September 2019 [REDACTED].⁴¹⁷ Another document [REDACTED].⁴¹⁸

1.314 [REDACTED]. For example, an internal Mastercard document from May 2020 states that [REDACTED].⁴¹⁹

1.315 As seen in [REDACTED].

- [REDACTED].⁴²⁰ [REDACTED].⁴²¹
- A Visa internal document dated 2020 [REDACTED].⁴²² An internal document dated 2019 notes [REDACTED].⁴²³

407 Visa response to PSR questions dated 9 November 2022. [REDACTED].

408 Visa response to PSR questions dated 12 January 2022. [REDACTED].

409 Visa response to PSR questions dated 12 January 2022. [REDACTED].

410 [REDACTED].

411 [REDACTED].

412 Mastercard response to PSR working paper dated 1 December 2023. [REDACTED].

413 [REDACTED].

414 [REDACTED].

415 [REDACTED].

416 A Visa document from 2019 [REDACTED].

417 [REDACTED].

418 [REDACTED].

419 [REDACTED].

420 [REDACTED].

421 [REDACTED].

422 [REDACTED].

423 [REDACTED].

Evidence from acquirers

- 1.316** When asked if there were any payment methods for online/card-not-present transactions for which they necessarily have to offer acquiring services because otherwise they would lose or fail to acquire potential customers:
- Two acquirers described being asked by some (but not all) merchants to offer American Express, or losing some (but not all) merchants as a result of not offering American Express.⁴²⁴
 - Another respondent indicated that American Express is particularly important in certain segments, such as for hotelling merchants.⁴²⁵
- 1.317** Two of these acquirers further clarified their views in calls, noting that third-party card systems (e.g. American Express) are essential payment methods for some merchant categories (e.g. travel and hospitality),⁴²⁶ or in 'certain scenarios'.⁴²⁷
- 1.318** When asked to give us their assessments of the competition that Mastercard and Visa face from alternative card systems and APMs for online/card-not-present transactions:
- One acquirer noted that the majority of cards issued in the UK are Mastercard-branded or Visa-branded cards and that its merchants expect provision of Mastercard and Visa acceptance as a 'default part' of the acquirer's proposition.⁴²⁸
 - Another acquirer told us that 'just as for card present (CP) transactions, Visa and Mastercard face very limited competition from alternative card systems for online/CNP transactions'.⁴²⁹
 - An acquirer noted alternative card schemes, explaining that these may be particularly important in certain sectors, such as travel and hospitality.⁴³⁰

Summary of the evidence on third-party card schemes

- 1.319** Transaction data shows that Discover and JCB have minimal presence in the UK. American Express, on the other hand, accounts for a material share of transactions, especially if we only consider credit card transactions. American Express's strong positioning, especially in travel and hospitality, is mentioned in internal documents and recognised by acquirers.

424 Stakeholder responses to PSR information request dated 11 January 2023. [REDACTED].

425 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

426 Stakeholder responses to our working paper on 'Competitive constraints in card payment systems'. [REDACTED].

427 Call with stakeholder [REDACTED].

428 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

429 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

430 Stakeholder response to PSR information request dated 11 January 2023. [REDACTED].

Direct Debit, cash and cheques

- 1.320** Mastercard submitted that Direct Debit, invoicing (and credit transfer), cheques and cash are widely used by consumers and exert significant competitive constraint on Mastercard. The prevalence of these payment methods indicates that the vast majority of payment transactions which could take place on Mastercard cards do not in fact take place on Mastercard cards.⁴³¹
- 1.321** Mastercard told us that despite a decline in the share of payments made in cash in recent years, it is still an important payment method for certain groups of consumers and merchants.⁴³² Mastercard submitted that almost 50% of small to medium-sized businesses still heavily rely on cash.⁴³³ In particular, merchants in some sectors, such as tradespeople, can choose not to accept cards because they prefer cash.⁴³⁴ Cash is also often used for business-to-business payments (especially between smaller businesses)⁴³⁵ and for person-to-person payments.⁴³⁶ Mastercard told us that, while cash is on average materially more expensive for merchants to accept than cards, some smaller merchants may have a proportionally lower cost of accepting cash than larger merchants, therefore, Mastercard must offer its scheme fees at a good value point to build acceptance with these merchants.⁴³⁷
- 1.322** Mastercard told us that the distinction between in-store and online transactions is blurring, with the result that some online payment methods (e.g. via an app) are increasingly competing with in-person payment options such as cash or cards. This is when apps for physical services can be a substitute for in-person physical services. Mastercard give the examples of the Uber app and train ticket apps.⁴³⁸

431 Mastercard response to PSR working paper dated 8 December 2023. [REDACTED].

432 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

433 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

434 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

435 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

436 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

437 Mastercard response to PSR questions dated 12 January 2022. [REDACTED].

438 Mastercard response to PSR working paper dated 23 February 2023. [REDACTED].

- 1.323** Visa told us that Direct Debit, cash, and cheques can be used by payers and accepted by merchants depending on which features of each payment method are most suitable. Visa submitted that merchants can nudge payers towards using Direct Debit and gave an example of HMRC as a merchant which places Direct Debit more prominently than debit cards.⁴³⁹ Visa said that in other countries such as Germany more transactions are supported using Direct Debit rather than cards.⁴⁴⁰ Visa also told us that cash and cheques sit alongside more modern payment methods.⁴⁴¹ Visa submitted that merchants that stopped handling cash weighed the costs of not accepting cash (not being able to accept payments from some customers) with the benefits (increased efficiency and lower risk of other payments). This, according to Visa, indicates that the overall portfolio of payments that merchants accept continues to change rapidly as merchants make decisions on which payment methods are most suitable.⁴⁴²
- 1.324** Visa's documents [REDACTED].⁴⁴³
- 1.325** Visa's documents [REDACTED]. An external document dated 2019 produced for Visa reports that [REDACTED].⁴⁴⁴ The documents [REDACTED].
- 1.326** An internal document dated 2018 notes that [REDACTED].⁴⁴⁵ However, the document [REDACTED] the document states that [REDACTED].⁴⁴⁶
- 1.327** An internal Visa document dated 2022 [REDACTED]. This document [REDACTED].⁴⁴⁷
- 1.328** Finally, Visa's documents [REDACTED]. An internal document dated 2022 [REDACTED].⁴⁴⁸ This and another document dated 2022 note that [REDACTED].⁴⁴⁹ An internal document dated 2022 notes that [REDACTED].⁴⁵⁰ [REDACTED].⁴⁵¹

439 Visa response to PSR questions dated 12 January 2022. [REDACTED].

440 Visa response to PSR questions dated 12 January 2022. [REDACTED].

441 Visa response to PSR questions dated 12 January 2022. [REDACTED].

442 Visa response to PSR questions dated 12 January 2022. [REDACTED].

443 [REDACTED].

444 [REDACTED].

445 [REDACTED].

446 [REDACTED].

447 [REDACTED].

448 [REDACTED].

449 [REDACTED].

450 [REDACTED].

451 [REDACTED].

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