

A response to the Digital Pound Consultation Paper by the Bank of England and HM Treasury

Kairos Economics

June 2023

Document Classification: Public

Contents

Key messages	2
1. Who We Are	4
2. Introduction	4
3. Increasing choice in retail payments is a worthy motivation	5
4. Our understanding of the current proposals	7
5. Relevant background on payment systems	8
Payment systems in the UK.....	8
The two-sided nature of markets for payments.....	9
6. Economic incentives and commercial models for private firms in the value chain	11
The importance of considering value propositions and commercial models.....	11
Hurdles to commercial incentives arising from economic profits in incumbent systems	14
7. Commercial models for the BoE as a payment system operator	15
Subsidy control	15
Pricing structure and processes	16
Funding structures	16
8. Interaction with other regulatory initiatives	17
Open Banking-initiated payments	17
The New Payments Architecture.....	18
Access to cash	18
Cost benefit analysis and prioritisation	18
The CMA’s Digital Markets Unit	19
The FCA’s Consumer Duty	20
9. Concluding remarks	21

Key messages

Increasing competition in retail payments is a worthy motivation for the digital pound.

- The market for retail payments between consumers and businesses in the UK is concentrated. Credit and debit cards account for 88% of retail payments and Visa and Mastercard share 99% of the market for card payments.
- Emerging market reviews by the Payment Systems Regulator (PSR) indicate a high cost to end users of payments using card networks.

The digital pound and accompanying retail payment system proposed by the BoE and HMT may be particularly well-placed to exert competitive pressure on cards.

- Under the current 'pass-through wallet' design, Payment Interface Providers (PIPs) may not be part of the existing group of payment service providers that participate in incumbent card schemes. This may help to mitigate the effect of commercial incentive blockers that have historically led to the preservation of the status quo and limited the uptake of alternative retail payment methods, such as Open Banking payments (which use interbank payment systems).

To achieve the objective of increasing competition in retail payments and to promote the uptake of the digital pound more generally, subsequent phases of the digital pound roadmap will need to consider:

- The **value proposition to end users on both sides of the market** (i.e. merchants and retail consumers) for retail payments made using the digital pound versus cards. Where there are gaps in the value propositions (such as functionality, consumer protections, rewards, trust and consumer awareness, for example), the BoE will need to ensure that the digital pound design will create an environment whereby there can be **sufficient commercial incentives for PIPs** to fill these gaps in the value proposition;
- The design options for **a value transfer mechanism** from the merchant side to the consumer side of the market (such as whether 'interchange-like' fees are necessary and if so, how they should be implemented, for example); and
- How and to what extent the **risk of the PIP market consolidating around Big Tech incumbents** (should they enter) should be mitigated, by working closely with the CMA's Digital Markets Unit (DMU) on measures such as mandatory third-party NFC chip access by Apple.

The consultation doesn't cover commercial models for the digital pound payment system (i.e. how the BoE will fund the upfront and ongoing costs of issuing the digital pound, and building and operating the core ledger and payment system).

This needs careful consideration during subsequent phases of the roadmap, in particular:

- If the BoE decides not to recover its costs by charging private providers, then **demonstrating compliance with subsidy controls** for the payment system services may be required. Here, collaboration with the CMA's Subsidy Advice Unit (SAU) may be helpful.
- If the BoE decides to charge PIPs for use of its payment system services (as is typically the case for other payment systems), then a **pricing framework for the BoE as PSO** will be required that considers price structures and levels, given the impact that input prices for PIPs could have on digital pound uptake and market dynamics.
- The merits and demerits of **alternative funding models** may be worth exploring during subsequent phases. For example, raising funds via the offering of **tokenised digital**

assets that are linked to the performance of the digital pound to end users could align end-user incentives with digital pound adoption.

It will be important to consider the substitutability of: i) payments made using the digital pound and the BoE's proposed payment system, with ii) payments made using existing forms of money (i.e. commercial bank money or physical cash) and other UK payment systems, when determining which use cases for the digital pound to prioritise.

In particular, certain use cases for the digital pound could have significant substitutability with payments provided by BACS, the Faster Payments System (FPS), the future New Payments Architecture (NPA), and Open Banking Payments that are facilitated by these systems. Should the digital pound capture market share from these alternative payment systems, this could have knock on effects for their commercial viability, and in-turn, the net benefits to consumers and businesses of the various UK payment initiatives that are underway. Whilst an empirical analysis of the benefits of different use case combinations across UK payment system initiatives has yet to be carried out, we hypothesise that prioritising the consumer to business retail use cases for the digital pound is likely to yield the greatest net benefit to UK consumers and businesses.

1. Who We Are

- 1.1. This response is written by Stella Deakin and Brett Wilkinson for Kairos Economic Consulting Limited (Kairos Economics).
- 1.2. Kairos Economics delivers independent and objective economic and financial support on matters of regulatory finance, competition and strategy to firms, industry bodies, regulators and policy-makers.
- 1.3. Stella Deakin and Brett Wilkinson have significant experience providing economic and financial support to regulators and providers of regulated infrastructure, including Payment System Operators (PSOs) in the UK and internationally.

2. Introduction

- 2.1. The Digital Pound Consultation Paper¹ (DPCP), issued jointly by the Bank of England (BoE) and HM Treasury (HMT), proposes that the BoE will build and operate a 'core ledger'² - a new major piece of national infrastructure that would provide the minimum necessary functionality for the digital pound.
- 2.2. The BoE states that a primary motivation for the introduction of a digital pound is to promote innovation, choice, and efficiency in payments³.
- 2.3. Given our expertise, this response focuses on aspects of the digital pound design and implementation that we consider would benefit from economic and regulatory insights from the payments sector. In particular, we focus on: i) economic incentives and commercial models for private firms in the value chain (with the BoE acting as a Payment System Operator (PSO)), and ii) how the current proposals may interact with other regulatory initiatives in the UK, including the New Payments Architecture (NPA), Open Banking, the CMA's Subsidy Advice and Digital Markets Units (SAU and DMU) and the FCA's Consumer Duty.
- 2.4. This response primarily addresses questions 1, 2 and 6 of the DPCP.

¹ BoE and HMT, 'The digital pound: a new form of money for households and businesses?' Consultation Paper, February 2023

² DPCP, p.53

³ DPCP, p.24

3. Increasing choice in retail payments is a worthy motivation

- 3.1. One of the primary motivations for the digital pound is promoting innovation, choice and efficiency in payments. The DPCP suggests four main potential use cases for payments made using the digital pound:
 - Consumer-to-business (C2B) transactions – in particular retail payments, i.e. payments made in-store and online (e-commerce);⁴
 - Consumer-to-consumer transactions (C2C);⁵ and
 - Paying and receiving salaries.⁶
- 3.2. As set out in Section 4, C2C and salary payments are largely made using the UK's retail interbank payment systems (Faster Payment System (FPS) and BACS), which are operated by Pay.UK, a UK-based, not for profit entity.
- 3.3. Retail payments – both online and in-store – are now predominantly made with debit and credit cards, and therefore rely on payment systems owned and operated by card networks. Visa and Mastercard account for 99% of debit and credit card payments in the UK⁷ and debit and credit card payments now make up 88% and 74% of C2B in-store and online payments, respectively.⁸ Visa and Mastercard are private enterprises with ultimate parent companies both headquartered in the US.
- 3.4. Currently, the PSR and policy-makers are concerned that competitive forces between Visa and Mastercard, and the threat from potential new market entrants, are not sufficient to generate the benefits for consumers and businesses that are typically expected from competitive markets, such as lower prices, higher quality, or increased innovation.⁹
- 3.5. The introduction of a digital pound may generate beneficial outcomes for consumers and businesses because:
 - 3.5.1. **It could increase choice in retail payments and constrain the potential for private firms operating within the debit and credit card ecosystems from earning excess profits.** The structure of fees that flow between participants within debit and credit card ecosystems are complex. Visa and Mastercard operate what is commonly known as a 'four party payment card scheme'. Under this model, scheme rules stipulate that 'Scheme fees' are payable by issuing and acquiring parties to card networks, and 'interchange fees' are payable by acquirers to issuers (which are regulated in some circumstances¹⁰), on each transaction. In relation to the state of competition in the credit and debit card ecosystems, the PSR has two market studies in progress:

⁴ DPCP, p.11, 76

⁵ DPCP, p.76

⁶ Whilst the paying and receiving of salaries is not explicitly stated as a use case, we note that the cap limit is designed to allow receipt of salaries. (DPCP, p.77, 80)

⁷ <https://www.psr.org.uk/our-work/market-reviews/market-review-into-card-scheme-and-processing-fees>

⁸ DPCP, p.76

⁹ PSR, 'The PSR Strategy', January 2022, p.5

¹⁰ https://www.legislation.gov.uk/uksi/2015/1911/pdfs/ukxi_20151911_en.pdf

- A market review of Scheme and processing fees associated with Visa and Mastercard, to understand whether competition, innovation and the protection of service-users are sufficient in the market for the supply of scheme and processing services. This follows PSR analysis, which showed significant increases in Scheme fees over time.¹¹
- A market review of consumer cross-border interchange fees between the UK and the European Economic Area (EEA). The PSR aims to understand the rationale behind the 400 – 475% increase in interchange fees for Mastercard and Visa’s consumer debit and credit ‘card-not-present’ transactions between the UK and the EEA, following the UK’s withdrawal from the European Union (EU) when interchange fees on these transactions were no longer captured by the relevant regulations under UK law.^{12,13}

3.5.2. **The design of the digital pound may foster an ecosystem with lower levels of intermediation than the supply chain underpinning card payments currently, reducing costs for businesses and consumers.** The current model for the digital pound could foster a payments ecosystem that is simpler and less intermediated than the complex supply chains for debit and credit card payments. A restructured flow of fees between participants could reduce costs for consumers and businesses, by lowering fixed costs or reducing the requirement for interchange fees, for example. **Accepting payments using digital pounds, rather than cards, could therefore be better value for retailers and ultimately end consumers.** We set out some initial considerations for potential commercial models for payments made using digital pounds in Section 5.

3.6. Whilst further work is needed, we therefore consider that **increasing choice in payments is a worthy motivation for the digital pound, in particular for C2B transactions.**

3.7. Should further work by the BoE continue to support the motivation for the digital pound to increase competition and choice in payments, then it will be key to consider:

- what value propositions to end users (e.g. retailers and end consumers) will encourage them to switch to making payments using digital pounds rather than existing forms of money and payment systems; and
- how private providers will commercialise the provision of digital pound payment services, so that there is an investment case to provide the value propositions needed to incentivise end users to switch to digital pounds.

3.8. The remainder of this response proceeds as follows:

- First, we set out our understanding of the BoE’s current proposals for the digital pound payment system;
- Second, we provide some relevant background on the economics of payments systems and the key players in the UK;

¹¹ <https://www.psr.org.uk/our-work/market-reviews/market-review-into-card-scheme-and-processing-fees/>

¹² Treasury Committee, Oral evidence: The work of the Payment Systems Regulator, May 2022, Q22 onwards

¹³ PSR, Working paper, Market review of cross-border interchange fees, A discussion of the impact of the UK-EEA cross-border interchange fee increases, December 2022, paragraph 2.18

- Third, we explain the importance of considering the value propositions of payments in digital pounds compared to alternatives and the commercial incentives of private operators in the system;
- Fourth, we briefly set out some key commercial considerations for the BoE effectively acting as a PSO in the digital pound ecosystem;
- Fifth, we set out other initiatives by UK regulators that we consider will need to be taken into account, as the BoE continues to assess the different design and implementation plans for the digital pound; and
- Finally, we set out some concluding remarks.

4. Our understanding of the current proposals

- 4.1. Key aspects of the design and implementation of the digital pound that are relevant for the economic considerations in this response are set out below.
- 4.2. The DPCP suggests that the BoE would issue the digital pounds, which would be recorded in a 'core ledger'. The BoE would build (or commission the build of) and operate the core ledger, which would provide the minimum necessary functionality for the digital pound as a new retail payment system in the UK, executing payments on a real-time basis¹⁴. Whilst not stated explicitly in the DPCP, we assume that the BoE would effectively take on the role of PSO, which includes setting the rules ('Scheme rules') that direct and indirect participants of the system would have to follow (see paragraph 5.1).
- 4.3. Payment Interface Providers (PIPs) and External Service Interface Providers (ESIPs) will access the core infrastructure via an application programming interface (API), and will interact directly with end users. Under the current proposals, PIPs will not be in possession of end users' digital pound funds, but instead will provide 'pass-through' wallets. In principle, PIPs can therefore be private firms outside of the current group of retail banks. Private providers will be responsible for users' identity and information, and carrying out any necessary Know Your Customer (KYC) and Anti-Money Laundering (AML) checks¹⁵.
- 4.4. Other key aspects of the design that are relevant for the economic considerations in this response are that:
- there will be no interest on digital pound balances, at least initially, because it is intended to be a means of payment (rather than as a savings product)¹⁶; and
 - the amount that individuals can hold will be capped at a level to manage the degree to which deposits could flow out of the banking system, but which supports wide usability of the digital pound. The BoE proposes a limit of between £10,000 and £20,000 per individual, which it estimates would allow most people to receive their salaries in digital pounds¹⁷.

¹⁴ DPCP, p.53

¹⁵ DPCP, p.53

¹⁶ DPCP, p.79

¹⁷ DPCP, p.81

5. Relevant background on payment systems

Payment systems in the UK

- 5.1. A payment system is a set of rules and procedures that support the transfer of funds between people, businesses and financial institutions. Rules can include business rules, obligations, technical standards for the execution of payment transactions, and principles governing administration. Typically, the management of rules and procedures is referred to as scheme activities, with technical implementation referred to as processing activities.
- 5.2. The UK has a number of payment systems that have been designated by HMT, which are summarised in Table 1 below. Importantly, for the purposes of the following phases of the digital pound roadmap, the proposed use cases for the digital pound would provide alternative methods of payment for consumers and businesses to several of these existing systems. Table 1 provides examples of where this could be the case.

Table 1: Existing UK designated payment schemes and example use cases for the digital pound that could provide viable alternatives for users

Payment system name	Description	Example digital pound use case that may provide viable alternative
Mastercard and Visa	Mastercard and Visa are the card-based payment systems that are operated by Mastercard Inc. and by Visa Europe and Visa UK, respectively. These card systems are used whenever a payment is made using an associated debit or credit card, which is predominately for retail payments made in store or online, and mobile payments.	C2B retail payments made primarily in-store or online
BACS	The Bacs Payment System processes Bacs Direct Credits, widely used to pay salaries, benefits, dividends and supplier payments directly into bank accounts, and Direct Debits, which automate the collection of regular payments, the preferred payment method for many UK bill payments. BACS is operated by Pay.UK.	Recurring C2B payments, and the payment or receipt of salaries
Faster Payment System (FPS)	FPS processes real-time payments and standing orders, which are initiated primarily online, mobile or via telephone banking, for individuals and businesses across the UK. FPS is operated by Pay.UK	C2C payments and C2B retail payments made primarily in store and online
LINK	LINK is the interbank payment system that sets the rules for ATM operators who want their cash machines to be part of the UK ATM Network, or card issuers who want their cardholders to be able to use the UK ATM Network. Link Scheme Holdings Ltd. is the operator of the LINK payment system.	C2C payments and C2B retail payments made in store

Cheque and Credit	Cheque and Credit is the interbank payment system in Great Britain that processes cheques and other paper instruments. Pay.UK operates the Cheque and Credit payment system.	-
CHAPS	CHAPS processes real-time high value sterling payments in the UK, such as wholesale payments and high-value retail payments, which are settled using the BoE's Real Time Gross Settlement infrastructure (RTGS). CHAPS is operated by the BoE.	-
Finality	A new payment system using distributed ledger technology to transfer funds between participants, which primarily processes wholesale and high value payments.	-

Source: Payment Systems Regulator and Kairos Economics

5.3. The purpose of Table 1 is to illustrate the main schemes, for which the digital pound and associated BoE payment system could in principle provide a viable alternative for users. We suggest that a detailed analysis of the size and shares of an appropriate market (now and in the future) is undertaken at subsequent phases in the roadmap, including possible changes that may arise with the introduction of various use cases for the digital pound. This is important because:

- For the success of the digital pound, the proposed use cases will need to provide a sufficient number of consumers with a value proposition that is at least as good as alternatives (see Section 5); and
- If a digital pound use case is expected to capture market share from existing payment systems, then this will need to be taken into account when prioritising use cases (and associated investment requirements) across UK payment system initiatives, such as between the NPA and the digital pound (see Section 7).

The two-sided nature of markets for payments

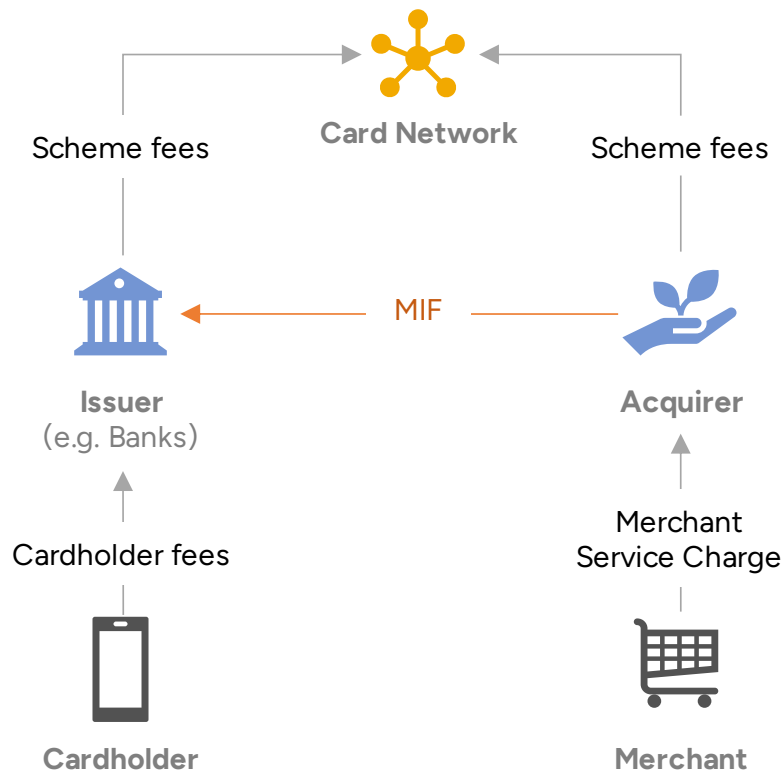
5.4. Payment systems and their participants provide distinct services to two end user groups, both of whom benefit from participation of the other. Therefore payment systems may be represented as 'two-sided markets'. For example, card networks connect consumers and merchants by providing issuing services to consumers, and acquiring services to merchants. Consumers benefit from widespread merchant acceptance of cards and merchants benefit from access to large numbers of customers. This two-sided nature of the market has two important implications.

5.5. First, where one side of the market derives a greater share of the benefits generated from connecting the two sides, then optimal market outcomes are achieved if this side of the market is charged a greater share of the total cost of supply. It follows that if optimal market outcomes are to be achieved, private

providers along the value chain require a mechanism for charging a greater portion of the total costs of supply to one side of the market than the other.

- 5.6. The value chain for payments is often complex and intermediated, with **distinct private providers having contractual relationships with only one side of the market**. Where merchants should be charged a greater share of total costs to generate preferred market outcomes, a commercial mechanism is therefore needed to bridge the two sides and transfer value from merchants to consumers.
- 5.7. Evidence from card schemes suggests that, for retail payments between merchants and consumers, merchants do indeed derive a greater share of benefits from the interaction than consumers. However, the firm providing card issuing services to the customer (issuer) and the firm providing card acquiring services to the merchant (acquirer), often differ. The typical four-party payment card model attempts to address this economic issue, which is illustrated in Figure 1 below.

Figure 1: Flow of fees in a typical four party payment card scheme



- 5.8. The second important implication of the two-sided nature of payments is that payments markets are subject to 'tipping'. Strong network effects, coupled with economies of scale and scope, generate a market in which a small number of 'winning' firms will take the majority of the market. Accordingly, existing payment systems benefit from an incumbency advantage and can be hard to 'unseat'. This is because an entrant has to attract a large user base on both sides, in order for it to be an attractive alternative to the services provided by the incumbent.

- 5.9. Whether a value transfer mechanism (such as interchange-like fees, for example) is needed for the success of the digital pound and how sufficient coverage is achieved on both sides of the market, will be key considerations for subsequent phases of the digital pound roadmap.

6. Economic incentives and commercial models for private firms in the value chain

The importance of considering value propositions and commercial models

- 6.1. Broadly speaking, payments will be made using the digital pound if the value received by end users from making payments using the digital pound payment system is greater than for alternative payment systems. Indeed, in light of the incumbency advantage conferred by network effects explained above, the value received (absent network effects) may need to be significantly greater than existing ways of paying to encourage uptake initially.
- 6.2. The BoE doesn't need to fully develop the value propositions itself, nor should it. However, the BoE should consider potential value propositions in its assessment so that key elements of design and implementation that will be required to support the value propositions are factored in during the planning and build stages.
- 6.3. Importantly, under the current BoE proposals, gaps in the relative value proposition will be filled by the private sector.¹⁸ As noted in the DPCP,¹⁹ the private operators – in this case, the PIPs - will need to make a return to cover their costs plus a reasonable return on investment, on the new customer propositions for the digital pound.
- 6.4. To assess the uptake of the digital pound for payment purposes, we suggest that its likely value to end users should be compared with alternatives (see Table 1) for both sides of the market, across use cases. An illustrative comparison between key elements of the use of digital pounds and debit cards for the use case of in-store retail payments between consumers and merchants is summarised below.

¹⁸ Or filled by the BoE and funded by the private sector in prices charged by the BoE for access – see Section 7.

¹⁹ DPCP, p.56

Table 2: An illustrative comparison between key aspects of the use of digital pounds and debit cards for in-store retail payments between consumers and merchants

Aspect	Service to consumers	Service to merchants	Additional considerations
Functionality	<p>Cards have multiple methods of payment initiation, such as via contactless and mobile payments, which improves convenience for consumers.</p> <p>It is not yet clear how payments will be initiated with digital pound wallets, and potential integration with smartphones or wearables.</p>	<p>Cards have multiple methods of payment acceptance and Point-Of-Sale hardware and software that is interoperable with other systems.</p> <p>The digital pound payment acceptance services that will be provided are not yet clear and whether existing card-based hardware and software will be interoperable.²⁰</p>	<p>Investments in hardware (e.g. wearables) and software will be needed so that payments made using digital pounds are at least as easy to initiate and accept as cards²¹</p> <p>As noted in the DPCP, innovations in functionality such as programmable payments will also impact the relative value propositions.²²</p>
Dispute processes and resolution	<p>Cards offer various consumer protections against fraud, unsatisfactory goods and merchant failure.</p> <p>The consumer protections and liability model have not yet been specified for the digital pound in the DPCP.</p>	<p>The costs of consumer protection are currently covered by merchant service charges for cards.</p> <p>Fewer rules and protections for the digital pound could be a means of cheapening the payment service offering to merchants.</p>	<p>The BoE is likely to need to specify scheme rules for dispute resolution and consumer protections, including the protections that are offered and which parties bear the costs and risks of providing these protections</p> <p>Costs of implementing and running the scheme could be recovered by charging PIPs (see Section 6).</p>
Trust and end-user awareness	<p>Consumers are familiar with cards and broadly trust that their card payments will reach the intended recipient, and in a timely manner.</p>	<p>Merchants are familiar with cards but generally consider accepting card payments to be unfairly expensive²³.</p>	<p>Investment in branding and trust on the consumer side is likely to be key for digital pound success.</p> <p>It will be important to consider where responsibility for marketing and consumer</p>

²⁰ Although we note that the BoE’s current proposal is to ensure that the design allows for merchant’s existing payment acceptance hardware and software. BoE, The digital pound: a new form of money for households and businesses? Consultation Paper, February 2023, page 77.

²¹ To the extent that smartphone wallets are expected to be important to sending and receiving payments, the CMA’s DMU will need to ensure fair NFC chip access, to align outcomes with the BoE’s objective of increasing choice in payments.

²² DPCP, p.13.

²³ See for example, the British Retail Consortium’s ‘Axe the Tax’ campaign

	<p>There is evidence of some nervousness around privacy and security with the digital pound.</p>		<p>awareness and education of the digital pound lies, including the costs of these activities.</p> <p>Trust and branding may be viewed positively on the merchant side, given the perception that cards have been unfairly costly.</p>
<p>Distribution of value</p>	<p>Broadly speaking, customers benefit from 'free' card payments (e.g. debit card payments made from a current account) or receive rewards (e.g. reward points). Interest on current account balances at retail banks vary, but include non-zero rates.</p> <p>The commercial model for the digital pound has not yet been determined but could range from consumers facing charges when making payments, through to receiving rebates when making payments via the monetisation of payment data (which could be in digital pounds or other assets, such as reward points etc). The DPCP states that no interest will be paid on deposits, which may mean that the digital pound is perceived by consumers as lower value in this regard, compared with debit cards, where some current accounts pay non-zero rates on balances.²⁴</p>	<p>Cards are widespread across consumers, with merchants charged for the costs of interaction, partially via the interchange model.</p> <p>The commercial model for the digital pound has not yet been determined but it is probable that merchants should still face higher charges than consumers. However, potential cost reductions from lower levels of intermediation or economics of scale and scope may mean that merchant fees are lower, which could drive uptake of digital pounds for payment purposes.</p>	<p>A commercial mechanism is likely to be needed to transfer value from merchants to the consumer side and drive uptake of digital pounds for payment purposes.</p> <p>Depending on the value transfer mechanism adopted and other aspects of the digital pound value proposition to end users, the 'zero interest' assumption may need to be revisited – particularly in the current interest rate environment, where the opportunity cost of foregone interest for customers could become material.</p>

²⁴ We note that, strictly speaking, customers benefit from the digital pound being a direct claim on the central bank versus deposits held at commercial banks. However, the aim of preventing of risks to uniformity under the digital pound is likely to mean that consumers making retail payments do not perceive a benefit, when comparing the alternatives. Moreover, the deposit protection scheme mitigates credit risk for retail deposit holders having balances lower than the current threshold.

- 6.5. As shown in Table 2, there are significant gaps in functionality, dispute processes and resolution (including consumer protection) and the building of trust and end-user awareness (including branding) for retail payments between consumers and businesses that will need to be filled, in large part by private providers. In addition, no mechanism is currently proposed for retail payments between consumers and businesses to transfer value from the merchant side to the consumer side of the market, which may be important for achieving preferred market outcomes (See Section 4). It will be important for following phases of the digital pound roadmap to:
- For each proposed use case for the digital pound, identify the gaps in value for end users between the digital pound payment services and alternatives, and what the service offering of the digital pound would need to be in order to close the difference in end-user value;
 - For the gaps in the service offering identified, identify which class of participants are best placed to take action to close the gaps (e.g. the BoE acting as a PSO with responsibility for setting up a payment scheme, PIPs investing in payment functionality etc.); and
 - Consider the commercial model under which efficient private providers will be able to make a sufficient return on the investments needed to address the gaps, including what the commercial mechanism should be to transfer value from one side of the market to the other, where relevant.

Hurdles to commercial incentives arising from economic profits in incumbent systems

- 6.6. Where there are economic profits (defined as profits in excess of costs plus a reasonable return on capital) for private participants of an incumbent's payment system, introducing a commercial mechanism that allows efficient participants in a new payment system to simply earn their cost of capital and no more, may not be sufficient to drive uptake. This is because private providers in the value chain that currently benefit from a share of economic profits in the incumbent systems will be incentivised to maintain the status quo and protect their economic profits.
- 6.7. To avoid misalignment of private sector incentives with outcomes for the digital pound that are desirable for consumers and businesses as a collective, ecosystem design should ideally ensure that efficient private providers that don't currently earn economic profits from existing systems can (at least in principle) provide the end-to-end services needed for digital pound success.
- 6.8. The current design for the digital pound, where PIPs can in principle enter from beyond the traditional group of payments service providers may help alleviate any misalignment of commercial incentives, which could arise from economic profits within the card network ecosystem (should these exist)²⁵. This may mean that the digital pound has a greater chance of providing a viable alternative to cards for retail payments than interbank payments (via Open Banking and FPS, or in future the NPA), because there may be less overlap between the participants of a digital

²⁵ The PSR's market review of scheme and processing fees associated with Visa and Mastercard aims to understand whether competition, innovation and the protection of service-users are sufficient in the market for the supply of scheme and processing services (highlighted in Section 3)

pound payment system and those of card schemes, than there is for participants of the retail interbank payment schemes and those of card schemes.

7. Commercial models for the BoE as a payment system operator

- 7.1. The BoE is likely to incur significant upfront and ongoing costs to issue digital pounds and build and operate the infrastructure that will support the digital pound payment system. The DPCP does not appear to address key aspects of potential commercial models for the digital pound payment system, in particular:
- whether the BoE will recoup some or all of these costs from private providers of digital pound services (i.e. PIPs or ESIPs) or from other parties, and
 - alternative options for the funding structure for covering capital costs.
- 7.2. In the next phase, it will be important to consider the range of options for commercial models available to the BoE and the merits and demerits of each. In this section, we highlight three key considerations.

Subsidy control

- 7.3. The consultation does not address whether the BoE will aim to recover costs (in part or in full) by charging PIPs (or ESIPs) for using services provided by the digital pound payment system. Current proposals by the European Central Bank (ECB) for the digital euro state that the Eurosystem will bear all the costs,²⁶ such that payment service providers do not pay the equivalent of the scheme fees levied by other payment systems.
- 7.4. We note that subsidies from the BoE in pursuit of monetary policy activities are exempt from subsidy controls, according to BEIS guidance.²⁷ However, it is unclear whether this exemption applies to any accompanying payment system infrastructure, which could be found to be competing with private payment system operators. Should the BoE wish to adopt the same approach as the ECB and recover only part of the costs for building and operating the digital pound payment system, a determination of applicable subsidy control requirements is likely to be required.
- 7.5. To the extent that subsidy controls do apply to the proposed digital pound payment system, the BoE would need to consider aspects such as the rate of return on capital and whether a commercial market operator (CMO) could reasonably have obtained the same terms on the market.²⁸ In this regard, the CMA's Subsidy Advice Unit may provide guidance on the subsidy control implications of the various commercial model options for the BoE.

²⁶ European Central Bank, Compensation model for the digital euro, Euro Retail Payments Board, February 2023, slide 10

²⁷ Department for Business, Energy and Industrial Strategy, Statutory Guidance for the United Kingdom Subsidy Control Regime, Subsidy Control Act 2022, paragraph 8.13

²⁸ Department for Business, Energy and Industrial Strategy, Statutory Guidance for the United Kingdom Subsidy Control Regime, Subsidy Control Act 2022, paragraph 2.18

Pricing structure and processes

- 7.6. Should the BoE decide to recover some or all of the costs by charging PIPs or ESIPs (in contrast to the current ECB proposals), a pricing framework for the products and services provided by the digital pound payment system will be needed to determine, amongst other things:
- the principles against which price structures and levels will be assessed (e.g. resilience, fostering competition etc.);
 - who will be charged for access and the products and services used;
 - total costs (and the makeup and nature of the component costs) that are to be recovered in prices, including:
 - the time period over which capital costs will be recovered;
 - the allocation of shared costs between different products and services offered by the digital pound system and shared overheads (should these exist) with other payment services provided by the BoE, such as RTGS and CHAPS; and
 - the level of return on capital investment that should be recovered (e.g. the actual cost of borrowing or the return on capital that a CMO would expect, given the level of risk exposure)
 - The structure of prices levied that will be used to cover costs (such as fixed fees or volume-based pricing, for example). In particular, there are important implications of certain pricing structures for downstream market dynamics (such as large fixed fees potentially creating barriers to entry for smaller PIPs and exacerbating returns to scale for larger PIPs, for example);²⁹ and
 - A governance process for setting price levels and structures periodically.
- 7.7. Evidently, the structure and level of prices charged by the BoE will impact the input price of PIPs and therefore the value that PIPs can generate for end users, compared with alternatives. It will therefore be important to consider how the commercial model adopted by the BoE could impact the value proposition for end users (illustrated in Section 6).
- 7.8. Lessons from the pricing frameworks used by other PSOs in the UK, such as the BoEs approach to RTGS and CHAPS, and Pay.UK's approach to FPS, BACS (and in future, the NPA) may provide valuable guidance.

Funding structures

- 7.9. The current proposals, although not explicit, appear to assume that upfront costs are funded by the public sector. However, given that the programme is still considering a range of design possibilities and that compliance with subsidy controls may need to be demonstrated, it may be worth considering the merits and demerits of different funding structures. For example:
- 7.9.1. A separate special purpose vehicle (SPV) for the payment system itself, which is funded alongside private finance. This could have a number of benefits, including but not limited to reducing the public sector funding requirement,

²⁹ Large fixed fees may also generate benefits, such as by reducing financial risk for the PSO as revenue is less sensitive to volume. However, an evaluation of which party is best placed to hold financial risk is required. This evaluation will depend on the pricing principles adopted and how these principles are prioritised by decision-makers.

demonstrating compliance with subsidy controls (if public sector terms are matched to those accepted by private investors) and ongoing cost efficiencies.

7.9.2. Given the timescales being considered, tokenisation of digital assets which are issued to end users or other parties, may be practicable. Financing in this form may facilitate consumer awareness but also help to address the challenges of gaining market share from incumbent systems, such as the card networks. This is because token-holders become incentivised to increase adoption, as it raises the value of their tokens, creating a degree of decentralised marketing and consumer engagement. This latter effect could be furthered by issuing a limited number of tokenised digital assets, linked to the performance of the system, to early adopters (e.g. high volume users in the first six months).

8. Interaction with other regulatory initiatives

8.1. Whilst we welcome increasing choice in payments as a primary motivation for the digital pound, it will be important to take into consideration other initiatives by UK regulators in subsequent phases of the roadmap. In this section, we set out other UK initiatives that are likely to impact the net benefits to consumers and business from the introduction of the digital pound.

Open Banking-initiated payments

8.2. As noted in the DPCP³⁰, since the CMA introduced Open Banking, it has been possible for consumers to make certain online payments to merchants using FPS, rather than card networks. In order to do this, merchants procure the services of a payment initiation service provider (PISP), which allows the merchant to accept payments via interbank transfers, instead of cards. This means that the payment system that processes the payment is FPS, which is run by Pay.UK, and not the card networks.

8.3. However, whilst this has been possible since 2016, the uptake of Open Banking-initiated payments remains low and is a small proportion of total payments (c.60million out of 40 billion total payments).³¹

8.4. The joint regulatory oversight committee (JROC) for Open Banking is working to unlock the potential for Open Banking payments. A noteworthy initiative is the FCA and PSR's aim to develop a framework for economic models for Open Banking payments, referred to as 'Premium API', which is intended to allow Account Servicing Payment Service Providers (ASPSPs) to charge PISPs for initiating a payment request. We consider that this is a welcome development in Open Banking payments, because it may facilitate a transfer of value from the merchant side of the market (for which the PISPs have contractual relationships) to the consumer side (for which the ASPSPs have contractual relationships), partly addressing the issues set out in Section 5. However, we note that the challenge of overcoming the commercial incentive issues arising from potential economic profits within the incumbent card systems remain (see paragraphs 6.6 to 6.8). This

³⁰ DPCP, p.129

³¹ <https://www.ukfinance.org.uk/system/files/2022-08/UKF%20Payment%20Markets%20Summary%202022.pdf>

is a key reason that the current proposal for the digital pound could be particularly effective at introducing competitive pressure on cards in retail payments.

The New Payments Architecture

- 8.5. The New Payments Architecture (NPA) programme is a large infrastructure initiative to create a retail interbank payment system that is able to support the market for digital payments as it evolves, which is operated by Pay.UK. Over time, it will replace both FPS and BACS.³² Broadly speaking, the NPA will therefore be used for C2C, C2B including relevant Open Banking payments, B2B payments, direct credits and direct debits (unless the latter is better delivered by third party payment providers).
- 8.6. One of the PSR's primary motivations of the NPA is to increase competition between payment systems, in particular retail payments. It is hoped that, alongside the development of an economic model for Open Banking payments, the improved functionality of NPA will address some of the issues that are restricting the growth of interbank payments in retail.
- 8.7. The NPA programme is at the stage of procuring the infrastructure via competitive tender and funding is being sought to build and operate the new system.³³ Evidently, the scope of the build (i.e. the products and services that will be supported by the NPA) and associated volume forecasts are key underpinnings for these commercial negotiations.
- 8.8. The extent to which various use cases for the digital pound would impact the scope and commercial viability of the NPA is therefore a key consideration for the next phases of the digital pound roadmap. This is because certain use cases for the digital pound, if successful in achieving significant uptake, could compete with services offered by the NPA (potentially impacting its commercial success and system resilience) and in extremis, render certain products or services unviable.

Access to cash

- 8.9. We note that the DPCP is clear that the digital pound is not intended to replace physical cash and that there are initiatives by the FCA and the PSR to preserve access to cash for those that need it.³⁴
- 8.10. Nevertheless, if the digital pound is to be used for in-store retail payments and C2C payments, then there will inevitably be some competition between the digital pound and physical cash and in turn between the BoE's digital pound payment system and LINK.

Cost benefit analysis and prioritisation

- 8.11. Evidently, volume forecasts that underpin cost-benefit analyses for various permutations of digital pound design and implementation will depend on the likely evolution of Open Banking payments, NPA payment volumes, and the use of physical cash.

³² The latter is not yet confirmed. <https://committees.parliament.uk/oralevidence/13396/pdf/> Q138

³³ <https://committees.parliament.uk/oralevidence/13396/pdf/> Qs 133 and 135

³⁴ DPCP, p.10 and <https://www.fca.org.uk/firms/access-to-cash> and <https://www.psr.org.uk/our-work/access-to-cash/>

- 8.12. Given the interlinkages between the digital pound and these other initiatives, cost-benefit analyses for the digital pound should estimate the incremental gains to consumers and businesses compared to a counterfactual in which the development of the other initiatives is factored in. For example, if a cost-benefit analysis for the digital pound assumes that it may capture a share of salary payments, then the impact that this has on BACS volumes and resilience, and in time the NPA, should be considered by the BoE and Pay.UK when making strategic decisions.
- 8.13. Whilst the empirical analysis has yet to be completed, it is possible that cost-benefit analyses support prioritising a subset of the proposed use cases for the digital pound, at least initially. We hypothesise that prioritising retail payments in-store and online between consumers and merchants may optimise the incremental benefits for end users across initiatives because:
- As set out in Section 3, the market for retail payments is concentrated around the card networks and the PSR has a number of studies investigating the extent to which card payments are costly for merchants and consumers;
 - Visa and Mastercard are privately owned firms, which are headquartered in the US. Payment systems that supply alternatives for other use cases, such as salaries and C2C payments, are predominantly run by Pay.UK, a UK-based, not-for-profit entity;
 - The pass-through wallet design increases the likelihood that PIPs come from outside of the group of private firms that may benefit from economic profits (if they exist) within the cards model. This may serve to remedy some of the commercial incentive issues that have been restricting the uptake of interbank payments in retail to date.
 - The design of the digital pound may also reduce intermediation, compared with existing payment systems that are intermediated by banks as payment service providers, potentially lowering costs for end users compared with alternative payment systems.

The CMA's Digital Markets Unit

- 8.14. The DPCP explains that PIPs will provide a wallet service but will not hold money.³⁵ It is therefore likely that PIPs will include non-Financial Services firms, such as 'Big Tech' providers, which may be well-placed to provide technical wallet services.
- 8.15. In order for the BoE's objective of increasing choice in payments to be met, it may be important to mitigate the risk of concentration in the PIP market. There is a risk of concentration in the PIP market, for two main reasons:
- First, if certain Big Tech firms choose to provide PIP-related services, then existing patterns of concentration in the current markets in which they participate could be leveraged to gain an advantage in the market for the supply of PIP-related services. For example, the CMA's Mobile Ecosystem Market Study found that Apple restricts access to the technology that enables mobile payments – being the Near Field Communication (NFC) chip in its devices. This means that third party wallet providers cannot serve customers using an Apple

³⁵ DPCP, p.11

iPhone (absent reliance on alternative technology, such as QR codes) and mobile payments from an Apple iPhone can only be made using Apple Pay.³⁶ There is therefore a risk that mobile payments using the digital pound concentrate around Apple Pay, limiting choice for end users. This is a particularly pertinent risk if, as the BoE suggests, most people will pay with digital pounds using wallets on their smartphone.³⁷ We note that concerns with respect to Apple's restriction of NFC access is one of the reasons the ECB cites for in-store payments with the digital Euro being enabled by both QR-code and NFC technology.³⁸

- Second, the potential presence of economies of scale and scope in the market for the supply of PIP-related services and network effects may make it inherently prone to market tipping.

8.16. We note that the CMA's Digital Markets Unit (DMU) has been established to increase competition in digital markets, which should serve to alleviate some of the competition issues in Big Tech.³⁹ As the digital pound programme progresses, close cooperation between the BoE and the DMU may be helpful, in particular for how and when the issue of NFC chip access that is described above, will be addressed.

The FCA's Consumer Duty

8.17. There is evidence that vulnerable customers are getting left behind from the current digital revolution in payments. Analysis of changes to cash withdrawals by the Royal Society of Arts (RSA) shows that whilst, on average, there was a reduction of 40% in cash withdrawals between 2019 and 2021, this was not evenly distributed across the UK. Constituency-level analysis shows that constituencies with the lowest decline were Liverpool Walton (16%) and Bradford South (20%) – two of the most deprived areas of the UK.⁴⁰ Survey evidence suggests that this is, in large part, due to a lack of access to technology (e.g. smartphones) and insufficient digital banking education.⁴¹ Introducing an alternative way of making digital payments creates an opportunity to address some of the reasons why more vulnerable customers are getting left behind and therefore reverse the trend observed in the market currently.

8.18. Helpfully, the FCA's new Consumer Duty is intended to ensure that customers in vulnerable circumstances face outcomes that are as good as those that other customers receive.⁴² It may therefore be important to ensure that private firms in the digital pound ecosystem, such as the PIPs, fall under the remit of the Consumer Duty, to help reverse the current trends.

³⁶ https://assets.publishing.service.gov.uk/media/62a228228fa8f50395c0a104/Final_report_summary_doc.pdf, p.8

³⁷ DPCP, p.12 and 77

³⁸ European Central Bank, Progress on the investigation phase of a digital euro - third report, Section 2.2, p.8

³⁹ <https://www.gov.uk/government/collections/digital-markets-unit>

⁴⁰ The Royal Society for Arts, The cash census, Britain's relationship with cash and digital payments, p.6

⁴¹ The Royal Society for Arts, The cash census, Britain's relationship with cash and digital payments, p.32
Concerns regarding digital payments covered a wide range of areas; fraud (64%), privacy (57%), budget management (36%), convenience (27%), lack of trust in technology (27%), lack of trust in cards (17%) and access problems (18%). We suggest that the first six of these concerns can be addressed – at least in part - via education.

⁴² FCA, A new Consumer Duty, Feedback to CP21/36 and final rules, Policy Statement PS22/9, July 2022, p.63

- 8.19. Finally, we note that the introduction of the digital pound may help alleviate some of the issues in retail banking that the Consumer Duty is seeking to address. In particular, the current free-if-in-credit (FIIC) UK retail banking model means that payments as a service (i.e. the ability to send and receive payments in digital commercial bank money, and obtain banknotes) is usually bundled into the current account service provision, and is not clearly separable from savings and short-term lending products, such as overdrafts. The result is that consumers tend to use their main current account provider for making and receiving payments. Separation of the payments products, via the introduction of the digital pound, may help the UK consumer consider payments, savings and short-term lending as separate products, and make them better able to assess value for money across providers of these different services.

9. Concluding remarks

- 9.1. We welcome increasing choice in payments as a primary motivation for the digital pound. In particular, increasing choice in retail payments, where Visa and Mastercard have a very high market share, could generate material benefits for consumers and businesses.
- 9.2. However, in order for the benefits of the digital pound to be realised, it will be important for subsequent phases of the digital pound programme to consider:
- the value propositions required to incentivise end-users to switch away from alternative forms of money and payment systems (e.g. commercial bank money, using the card networks), towards use of the digital pound and the BoE's accompanying payment system;
 - the commercial incentives on private operators to invest in these value propositions; and
 - The interlinkages with other UK initiatives aimed at increasing choice and improving outcomes for consumers and businesses in payments.
- 9.3. The BoE as a PSO, will also need to consider the commercial models it could use to recover costs, including a reasonable rate of return, such as by charging PIPs for access and the use of its services. Frameworks from RTGS/CHAPS and Pay.UK may provide helpful guidance in this regard. To the extent that the BoE does not plan on recovering its costs, the subsidy control implications of this decision should be considered.