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THE COMMERCIAL MODEL FOR VARIABLE RECURRING PAYMENTS – WAVE 1

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1 Executive summary

Frontier Economics has been commissioned by Open Banking Limited (OBL) to design the potential commercial model for Wave 1 commercial variable recurring payments (cVRP). This Wave will focus on low-risk use cases, such as payments to utility and rail companies, regulated financial firms, e-money institutions, government bodies, and charities.

Variable Recurring Payments (VRP) is a feature that enables account-to-account payments via Open Banking, a system introduced following the CMA's 2016 mandate to enhance competition in retail banking and payments. cVRP will allow customers to authorise businesses and service providers to collect variable payments directly from their bank accounts. This provides an alternative to existing methods such as Direct Debit and card-on-file transactions.

Open Banking enables other forms of payments, notably single immediate payments (SIP) and 'sweeping VRP'. These are distinct from cVRP in two ways. One difference is in use case: SIPs are one-off payments while cVRP and sweeping VRP allow for multiple payments to be taken. Sweeping VRP is generally only used for transfers between an individual's own accounts whereas cVRP is envisaged to support commercial transactions (e.g. between merchants and consumers). The second difference is in the terms of provision: under the CMA mandate SIPs and VRP must be provided freely by sending ASPSPs (e.g. banks who hold a customer account making a payment) whereas cVRP and its associated functionality is considered a "premium API" and can be charged for by sending ASPSPs.

There will be a range of parties in the value chain required to provide cVRP. This includes sending ASPSPs, receiving ASPSPs (who hold billers' payment accounts) and PISPs (who facilitate billers' access to the payment method). The focus of our work is on the commercial relationship between sending ASPSPs and PISPs, more specifically the prices that sending ASPSPs charge for their services. It is common for commercial models to be independently established and in such cases there is no need for work such as this to design them. There are characteristics of the sending ASPSP and PISP relationship, including the need for establishing a network and potential efficiencies, that may justify such a design. These considerations do not extend to other parts of the value chain, where commercial models can in principle be left to market participants.

If a commercial model is set for ASPSPs it will be done so as part of the Multi-Lateral Agreement (MLA). The MLA will establish a set of common rules and requirements for ASPSPs and PISPs. The MLA will be managed by the 'Operator' which is currently in the process of being established.

Our work is intended to help inform the Operator as to what commercial model could be set within the MLA. This report outlines the key choices and recommendations for designing the commercial model for the sending ASPSP. Defining this commercial model is a key aspect of the rollout of Wave 1, as it will establish a framework for agreements and pricing, which will,

in turn, influence adoption and participation in the system. In our work we have evaluated methodologies for price setting, considered detailed design options and set out the potential prices that could be established for sending ASPSPs in Wave 1.

Further work is being carried out by UK Finance to assess the commercial model that could apply in later Waves that involve higher risk use cases (such as e-commerce). As we have progressed our work it has been shared with UK Finance. Below we have outlined further the main implications for later Waves of our analysis, areas where we would expect alignment between Waves and areas where there may be divergence in approach between Waves.

1.1 Scope of our work

The scope of our work has been to develop and propose a methodology to establish a commercial model price or price cap for Wave 1 cVRP. As part of this work we were to at least consider:

- comparator payment system charges and costs;
- any international examples or expertise from other sectors that could be relevant to the development of the methodology to establish a commercial model; and
- seek appropriate stakeholder input including by contacting and interviewing a representative number of PISPs and ASPSPs.

Based on these considerations we were to assess the appropriate methodology and to provide a range of rates or rate card caps that would meet different requirements (including promoting adoption across the market).

Out of scope is any work to:

- calculate pricing proposals for later Waves;
- determine the scheme fee charged by the Operator;
- consider Open Banking products beyond cVRP; and
- consider financial arrangements of Pay.UK and of the Faster Payment System.

The output of the work is this report which covers the approach, proposals, assumptions and recommendations for how cVRP may evolve.

1.2 Approach to assessment

cVRP offers the ability to make recurring payments between a Payer and a Biller using Open Banking. Payments will be taken on the basis of a ‘mandate’ that a customer agrees to when establishing the payment instruction. The mandate sets parameters including the frequency of the payment and the maximum that can be taken. Mandates can be updated with the agreement of the payer. In functionality cVRP has similarities to Direct Debit and debit and credit card transactions that are ‘card on file’, all of which allow for recurring payments. There

are however differences in service and functionality, including for example that cVRP allows for a faster transfer of funds to the Biller compared to "batch" processing with Direct Debits and the deferred net settlement arrangement associated with card payments.

To create a market for cVRP, it must compete with and substitute for existing mature payment options such as Direct Debit and cards. The design of a commercial model must identify the challenges and opportunities at each stage of market development to ensure success. In particular:

- **Adoption**: cVRP will be a two-sided market that involves ASPSPs, PISPs, Payers and Billers. The success of cVRP will depend on its adoption across these participants. It's important to identify the factors influencing adoption, including pricing, and define realistic growth scenarios.
- **Costs**: For cVRP to be sustainable participants must be able to recover their costs which may include upfront investments and ongoing costs to provide their services. For our purposes, the focus is on whether ASPSPs can recover their costs with the commercial model we develop.
- **Margins**: An appropriate return for this activity should account for the costs and risks involved in delivering the service, as well as incentives to participate.

Our approach to addressing these issues has been informed by stakeholder engagement and desk research. Chapter 5 sets out the main insights from stakeholders. Stakeholder insights and data have been incorporated to inform costs, volumes, and the pricing of competing payment methods. Chapter 8 sets out the estimated pricing of competing payment methods. Chapter 10 sets out our modelling and evidence on costs and potential payment volumes and the options for what pricing could be adopted in the MLA.

Our evaluation of design options is guided by the PSR and FCA's principles for pricing cVRP, which include ensuring the price reflects long-run costs, incentivises investment and innovation, promotes adoption by consumers and businesses, treats all participants fairly, and is transparent and easy to understand, with a clear and transparent underlying methodology. These principles are set out in full in Chapter 3.

1.3 Methodology for setting the level of prices

We have evaluated two broad methodologies for determining the price level that sending ASPSPs could receive:

- **Value-based approach**: prices are set based on the value to beneficiaries. These methods consider what price beneficiaries are willing to pay on average, typically factoring in benefits and cost savings compared to alternatives. Value based approaches have been used, for example, to set the interchange rate for credit and debit card transactions.

- **Cost-based approach**: the price that an ASPSP can charge is set based on the costs to provide cVRP, and allow for a remuneration. This approach has been used to determine the price of premium API features in the EU and is widely used in regulated industries.

Considering the FCA and PSR's principles and practicality, we conclude that a cost-based approach is the most suitable *starting point* for considering pricing Wave 1 cVRP. However, as cVRP will compete with existing payment methods, the commercial model must consider the relevant prices of these alternatives. Therefore, we recommend to:

- Use a cost-based approach to determine what pricing would be required to ensure that ASPSPs are able to fully recover their costs and earn a normal competitive return.
- Supplement a cost-based analysis with an assessment of the prices for substitutes to cVRP (for Wave 1, a mixture of Direct Debit and card payments). This will account for the incentives for Billers to adopt cVRP from a pricing perspective.
- Evaluate whether the price level indicated by a cost-based approach is likely to result in a competitive 'all-in' price for cVRP relative to its substitutes (the price paid by an end-user, accounting for all parts of the value chain).
- Evaluate whether the likely return earned by ASPSPs will be sufficient to incentivise them to adopt cVRP in lieu of existing payment options (where they may also earn a return).
- If there is tension between incentivising adoption for ASPSPs and PISPs / Billers, to consider options for the Operator that might resolve those in ways that will best facilitate the adoption of cVRP.

We have considered the options for implementing a cost-based approach in practice, taking into account the costs to be recovered and the remuneration ASPSPs will earn from providing cVRP. Our assessment recommends that:

- The price for Wave 1 should consider the direct incremental costs of providing cVRP attributable specifically to Wave 1 (for example, the cost of handling disputes and queries from customers who use cVRP, or the work required to implement new technical specifications for cVRP).
- The price for Wave 1 could consider costs which are shared with later Waves, or the recovery of those shared costs could be delayed. The price for Wave 1 should not contribute to the recovery of shared costs with other payment methods or the broader cost base of ASPSPs.
- The price for Wave 1 should factor in remuneration based on the margins earned by comparable firms with similar products in the payment industry. Remuneration should also consider the margins that ASPSPs may earn on payments that are substitutes for cVRP.

1.4 Key design choices and recommendations

We have considered the design choices necessary to fully specify the commercial model, such as who would be charged, how the commercial model would be set, what structure the charges would take, and whether charges should vary with volume or over time. Based on our evaluation against the principles, we recommend:

- **Charging PISPs as the preferred approach**, as it is feasible to implement and supports adoption by allowing for charges to be passed on to Billers (one of the beneficiaries of the service). The main alternative is for ASPSPs to charge Payers (as another beneficiary) but this is likely to severely hinder adoption as Payers generally do not face a price for using alternatives such as Direct Debit or cards.

- **Multi-lateral agreements (MLAs) that embed the commercial model are preferred**, as they simplify and reduce the cost of building a network for cVRP by avoiding multiple bilateral negotiations and are likely to be more effective in driving adoption. Requiring bi-lateral negotiation between each ASPSP and PISP pairing would be costly and would also likely disadvantage participants with less bargaining power (e.g. smaller PISPs).

- **The commercial model could be set as the only allowable price for participants of the MLA or as a "fallback" in the MLA to allow for the possibility of bi-lateral negotiation.** Though if a "fallback" approach is adopted we would expect it to be the price used in the vast majority of cases as any bi-lateral negotiation would lead to a worse outcome for one side.

- **A single market price** is more effective for ensuring fairness, transparency, and adoption. It can provide an incentive for cost efficiencies for ASPSPs (who benefit from a higher margin). Setting prices for each ASPSP would be a complex exercise, lead to less transparent pricing and may diminish the long-term incentives for cost efficiency.

- **A fixed pence per transaction charge** is likely the most appropriate reflection of costs. The main alternative, ad valorem pricing, is likely to be more appropriate where costs are more closely linked to payment value.

- **One price for all use cases** rather than individual prices for each use case. One price is simpler and there is no current evidence to support a rationale such as significant differences in cost.

- **One price for all Billers and PISPs.** The alternative is to introduce price tiering that allows for different prices for factors such as Biller size. Such pricing models are common practice and could facilitate cVRP's competitiveness. Practically it is not feasible to implement tiering for Wave 1, but it should be considered further in due course.

- **The initial price could be set for approximately five years.** This provide consistency and stability while cVRP is given time to grow and also aligns with time periods commonly used in regulatory price setting. To the extent the recovery of any ASPSPs' costs are

deferred this should allow such deferral to be spread over a larger volume of payments in later years (and therefore have a more limited impact on price).

- The time period for the initial price will also depend on whether the Operator will set a commercial model for Wave 1 and later Waves separately, or a single commercial model across Waves. This is discussed further below. Regardless, further evaluation will be needed by the Operator in due course on both the necessity of continuing to set a commercial model and if so, the frequency with which prices are amended.

For our analysis clarity is needed on the services that ASPSPs will provide. There are 'core' services that only ASPSPs can provide, including facilitating the transactions and providing a point of contact for their customers to raise queries and disputes. We factor such services into our assessment of the costs that ASPSPs will incur.

As with most payment options there are also likely to be customer protections and associated risks and liabilities. There are important choices about the degree of those protections and liabilities and who bears them. Liabilities could be borne by ASPSPs but could also be held by other participants such as PISPs. If the former holds then there may be significant costs that need to be considered in the commercial model. For Wave 1 the expectation is that such liabilities will be minimal or zero as use cases are low risk and protections are expected to be provided by existing schemes or requirements that exist in most of the sectors covered.

This report does not opine on the question of whether, or how, the commercial solution could be adopted in a way that complies with competition law.

1.5 Assessment of potential prices for Wave 1

In Chapter 10, we assess potential volumes for Wave 1 cVRP, consider options for pricing and assess whether such pricing is likely to incentivise adoption across each side of the market.

In terms of costs for Wave 1 cVRP we have gathered data from six ASPSPs and produced a range of estimate upfront investments and ongoing running costs. In summary:

- Each ASPSP will need to make an initial investment in order to provide cVRP. Our central estimate for this figure is c.£1.85m. These costs mainly relate to implementing technical specifications with a smaller component for operational readiness. These costs may be as low as a little under £1m or as high as nearly £3.5m.
- Our central estimate for ongoing fixed costs is c.£300,000 each year, mainly to cover staff costs to manage and operate cVRP. Such costs could range from £200,000-£400,000.
- Ongoing variable costs will cover transaction costs, handling disputes and queries, FPS charges and the cost of the Operator.
  - Our central estimate for likely ASPSP costs is £0.023 per transaction but this could be as low as £0.012 or as high as £0.260. Most ASPSPs provided estimates around the low or central values.

- FPS transaction costs are £0.010 per transaction.
- The scheme fee to cover the Operators cost is estimated at £0.035 but will be sensitive to volumes of all cVRP Waves and we estimate a range between £0.022 or £0.064.

The range in costs reflects at least in part the fact that cVRP is not yet in operation and costs have not yet been incurred.. ASPSPs have therefore had to, in a limited time, approximate costs based on their experience of other payment options. Our focus is on the central estimates but we consider the implications of the higher and lower scenarios of cost in the Annex. Our central estimate generally reflects the median expected cost, with minor rounding in some instances

We also account for a margin of 10% for ASPSPs based on evidence collected of margins in the wider payment ecosystem (though in practice margins may be negative for the initial period if the recovery of some costs is delayed). This margin is also assessed against what ASPSPs could plausibly earn on payments that will be substituted for by cVRP. Where the recovery of costs are delayed or losses are incurred we also assume a 5% cost of capital.

In terms of plausible volumes of Wave 1 cVRP we have estimated:

- There is a maximum addressable market for Wave 1 of 4.2bn transactions per year.
- We calculate potential scenarios of adoption based on the growth rates for sweeping cVRP, with variation to provide sensitivities.
- We calculate that cVRP could have market shares of 2.5% of Wave 1 use cases (1.2% of the market) five years after launch in our central scenario.
- We use OBL's scenarios of future Wave volumes, which suggest future Waves could have market shares of 2.3% five years after launch in their central scenario.

Based on these scenarios and costs we have calculated the implied pricing for ASPSPs as summarised in Table 1. Pricing options vary based on what costs ASPSP are able to initially recover. We have modelled two 'phases': an 'adoption period' covering the first five years and a 'recovery period' covering years 6-10. These time periods have been chosen to allow enough time for cVRP to grow and reach material volumes. The pricing in each period reflects the average expected costs set against average expected volumes.

Note that while we use a 5 year modelling approach to assess payment volumes and costs it is in principle possible that pricing could be set for shorter or longer durations. For example, pricing could be set for the first few years based on expected average costs and volumes over a longer duration (the logic of which is to support adoption as it will lead to a lower initial price as volumes are expected to grow over time).

Table 1 Summary of pricing options for ASPSPs (pence per transaction)

Scenario	Description	Period 1: Adoption period price (Year 1-5)	Period 2: Recovery period price (Year 6-10)
1	**Recover all costs** in period 1	11p	5p
2	**Delay recovery** of **upfront investment costs** to period 2	8p	6p
3	Delay recovery of **upfront investment** and **ongoing fixed costs** to period 2	6p	6p
4	Delay recovery of **upfront and scheme fee costs** to period 2	6p	6p
5	Delay recovery of **upfront, scheme fee** and **ongoing fixed costs** to period 2	4p	7p
6	Delay recovery of **upfront, scheme fee**, **ongoing fixed costs** and **margin** to period 2	3p	7p

Source: *Frontier analysis.*

Note: *Results presented to the nearest pence which means some prices in period 2 appear the same across scenarios but do vary slightly.*

In Chapter 10, we also consider whether these scenarios are likely to provide the right incentives for each side of the market to invest in and/or adopt cVRP. The scenarios of volumes will only be achievable and consistent with pricing that provides such incentives. Key considerations are the competitiveness of cVRP compared to alternative pricing options (influencing Billers' willingness to adopt cVRP) and the relative margins that ASPSPs can earn on cVRP compared to alternatives. The incentives for PISPs are also important and we assume a cost and return for them in our estimates of the total price for cVRP.

In relation to **competitiveness** we focus on pricing for larger Billers (likely to be key to uptake for Wave 1 use cases) and find that:

- No scenario is likely to lead to pricing that is competitive with Direct Debit. The charges faced by large Billers for Direct Debit are very low and it was always expected that cVRP would not be able to directly compete on price. That has informed our assumptions about the potential addressable market for Direct Debit outlined above.
- Considering competitiveness with card payments:
  - Scenarios that do not delay any cost recovery are unlikely to be competitively priced compared to cards in all but the most expensive transactions.

- Scenarios that delay the recovery of some costs and lead to an initial price of 6-8p could be competitively priced against debit card transactions that are valued at more than £75.
- Scenarios that delay the recovery of most costs and lead to an initial price of 3-4p become competitive with credit cards at transaction values around £50 and with debit cards at around £60.

In relation to ASPSPs' incentives we find that the benchmark margin we apply (10%) may lead to a similar margin compared to the alternatives (Direct Debit and debit card) at payment values of around £75-£100. Sending ASPSPs earn zero margin on Direct Debit transactions and the mix of transactions that substitute for cVRP will be important. The higher the proportion of Direct Debit transactions the more likely it is that this margin will create a strong incentive for ASPSPs to invest in and promote cVRP.

Putting these assessments together we find that:

- **Scenarios that have no or limited delay of cost recovery may lead to prices of around 11p per transaction.** These pricing points are likely to be less competitive against alternatives including debit and credit cards and therefore may not align well with the PSR and FCA's pricing principles on incentivising adoption.
- **Scenarios that delay the recovery of material costs including upfront investments and scheme costs may lead to prices around 6-8p per transaction**. These pricing points may lead to cVRP being broadly competitive with debit and credit cards. The delay in recovery creates a disincentive for ASPSPs but that may be balanced against the long-term value and margin that they may receive from cVRP.
- **Scenarios that delay the recovery of most costs and margin could lead to prices as low as 3-4p per transaction** (covering variable costs and FPS fees). These pricing points would likely allow cVRP to be competitive with debit and credit cards across a wide range of payment values. However, the delay in recovering most costs is likely to act as a much stronger disincentive for ASPSPs to invest in and promote cVRP.

Given this assessment, it is likely that an initial price point around 6-8p represents the best balance between the incentives of different participants of cVRP. It provides the potential for cVRP to be competitively priced against card payments with values around £75 or more. It requires ASPSPs to incur initial costs but with the expectation that costs are recovered and the margin on cVRP to be at least broadly in line with the blend of substituted payments (with the potential for slightly higher margins depending on the payment mix).

1.6 Implications for the commercial model for later Waves

Our analysis has focused on the development of a commercial model for Wave 1 cVRP. There are important interdependencies between our work and the work that is being undertaken by UK Finance to develop the commercial model for later Waves.

Alongside the initial price for Wave 1 the Operator faces an important decision as to whether to operate separate commercial models for Wave 1 and later Waves, or to aim for a single commercial model covering all Waves and use cases. This decision will shape the interdependencies between the two pieces of work.

There are several possibilities that the Operator could consider:

- **Single commercial model.** The commercial model could apply one of the pricing options set out in this work for an initial period of time that covers all use cases.[1] This price would then be adjusted based on further work undertaken by UK Finance to set a long-term commercial model covering all Waves.
- **Two commercial models (transitional)**. The commercial model could apply one of the pricing options set out in this work for Wave 1 use cases. Separately a commercial model is designed and applied for later Waves (or the whole of cVRP. Two commercial models run concurrently for an initial adoption period and are eventually merged together.
- **Two commercial models (permanent).** The commercial model could be set for Wave 1 and a separate commercial model is established for later Waves. These separate commercial models are then maintained so long as there is a commercial model within the MLA.

The decision between these options and the point of any transition will likely turn on several factors that will influence the wider adoption of cVRP, including:

- **Economic considerations**. There may be reasons to differentiate between the Waves where there are differences in underlying economics or commercial dynamics. For example, if there are differences in costs there may be a reason to charge higher or lower prices between Waves. This may be the case where, for example, later Waves have higher risks that ASPSPs are expected to bear.
- **Commercial considerations**: Closely linked to economic considerations may be wider commercial issues that can influence adoption. For example, rapid changing of the initial commercial model may risk undermining confidence in cVRP as a new payment method among Billers.
- **Practical considerations**. There may be a range of practical issues that make it easier or harder to set separate commercial models. One set of issues is technical: the ability to reliably and easily differentiate between use cases to set different prices. Other practical issues include how the length of time for commercial contracts and how quickly and easily models can be transitioned.

Further industry feedback will be important for helping to shape this decision and its implementation.

[1] As noted above, the pricing options could be adopted for the five years of the 'adoption period' but could be used for a shorter period of time.

Whether there is a single commercial model or two, there are areas we would expect a common approach to be adopted across the Waves, notably:

- **The need to set a commercial model**. The need and value of having a commercial model for ASPSPs within the MLA is likely to be the same regardless of use case. The same inefficiencies and potential for an unlevel playing field will likely remain with later Waves and their use cases.
- **The need to consider the incentives across the market.** We have considered the incentives of Billers, ASPSPs and PISPs in our assessment of potential prices in a commercial model. We would expect that the UK Finance work, regardless of whether it starts with a cost based or value based approach to estimate prices, would need to cover the same considerations.
- **Charging PISPs**. In later use cases it will still be the case that PISPs have the potential to pass charges on to beneficiaries (Billers). The same dynamics will also be at play that make charging Payers likely to severely hinder the wider adoption of cVRP.

There are also important dependencies that will exist regardless of whether there is one commercial model or two. These will need to be factored into any further analysis by UK Finance and include:

- **Upfront investment costs may need to be factored into later Waves' pricing**. There are material upfront costs that are necessary for all Waves. If these costs are deferred and spread across all cVRP volumes then they may need to be factored into the assessment of pricing for later Waves (collectively or separately).
- **Volumes of later Waves will affect the scale of scheme fees**. Scheme costs per transaction are sensitive to the total volumes expected for cVRP. To the extent that UK Finance work provides more detailed assessments of later Wave volumes these will need to be factored into the potential scheme fees required for all Waves.

Finally, there are choices around the commercial model that could diverge between Wave 1 and later Waves. These choices may in turn drive differences in pricing between two commercial models or may lead to a different price under a future single commercial model compared to what has been set out in this work. These choices include:

- **The services provided by ASPSPs**. Wave 1 use cases are by definition low risk and such risks should largely be covered by existing industry or regulatory schemes. Later Waves will have higher risks and decisions are needed about the extent of customer protections and who in the ecosystem bears liability. This could be ASPSPs, in which case it forms an important 'service' they provide which may need to be factored into the price and fair return that they earn. Equally other participants such as PISPs could bear some or all of any such liability and agreement on who does so is an important precursor to setting a commercial model.
- **The pricing structure of the commercial model**. We recommend a fixed pence per transaction, a single price across use cases and no features such as tiering. This reflects

a mixture of the nature of the use cases and their cost structure as well as what is pragmatically achievable for the initial rollout of Wave 1. These factors may be different for later Waves. If two commercial models are operated then there may be a divergence between them in pricing structure and pricing level. If only a single commercial model is operated then judgement will be required as to what structure will best suit the overall set of use cases for cVRP.

2 Introduction

Background to Open Banking and cVRP

In 2016, the Competition and Markets Authority (CMA) completed an investigation into the UK retail banking market. Following that investigation the CMA implemented a series of remedies including the introduction of Open Banking, a framework that enables customers to securely share their financial data with third-party providers (TPPs) and access innovative financial products. Open Banking was designed to empower consumers, increase competition in banking and payments, and provide stronger customer protections.[2]

One of the main payment capabilities offered by Open Banking is variable recurring payments (VRP). The CMA mandated VRP for 'sweeping', which allows customers to automate payments between their own accounts – for example, transferring excess funds from a current account to a savings account. However, the industry and regulators have recognised the potential for VRP to be extended beyond sweeping, leading to the development of commercial variable recurring payments (cVRP). Unlike sweeping VRP where customers sit on both sides of the payment, cVRP allows customers to authorise businesses and service providers to collect variable payments directly from their bank accounts, offering an alternative to existing payment options such as Direct Debit and card-on-file.[3]

The development of cVRP as a viable alternative payment option has been a key objective for the Payment Systems Regulator (PSR) and the Financial Conduct Authority (FCA). Establishing cVRP at scale requires addressing several complex challenges, including defining technical requirements, ensuring robust customer protections, determining liability frameworks, deciding who operates the 'scheme', and establishing sustainable commercial models. The commercial viability of cVRP depends on ensuring that all participants – including Account Servicing Payment Service Providers (ASPSPs), Payment Initiation Service Providers (PISPs), TPPs, billers, and payers – have the right incentives to support adoption and investment in the ecosystem.

To compete effectively with existing payment methods, cVRP must deliver clear benefits such as greater convenience, cost efficiency, and security. To facilitate a rapid rollout of cVRP, and recognising differences in potential risks, the VRP Working Group determined that deployment should happen in 'Waves'. Wave 1 of cVRP will focus on 'low-risk' use cases such as payments for utilities, government services, and charitable donations. The full list is set out in Table 1 below. These initial use cases are expected to pave the way for broader adoption to

[2] Combined with the revised Payment Services Directive (PSD2), Open Banking grants third-party providers "read and write" access to customer payment account information. This enables third-party providers to access account information (such as transaction history) and initiate payments from those accounts on customers' behalf. Third parties can then provide innovative services helping customers manage their spending and consolidate their finances, and enabling super-fast payments. New services and entrants in the payments market then stimulate competition and further innovation.

[3] See: https://www.openbanking.org.uk/variable-recurring-payments-vrps/

higher risk use cases, including e-commerce, driving further innovation and competition in the payments landscape.

Table 2 Use cases in Wave 1

Use cases	**Detail**
Utility and rail companies	cVRP payment transactions to electricity, gas, water and telecoms providers (including broadband, fixed phone lines, mobile phone service contracts), and for train tickets.
Regulated financial services firms	cVRP payments into financial products/accounts eligible for FSCS protection[4] (such as deposits, insurance and investments), pension schemes and mortgages.
E-money institutions	cVRP payments into electronic money accounts provided by Electronic money Institutions[5] authorised by the FCA.
Government (central or local)	cVRP payments to designated government departments, agencies, public bodies, local authorities and TFL.[6]
Charities	cVRP for charitable donations, to registered charities.

Source: *Open Banking Limited*

Note: *All retail payment transactions are excluded. Transactions must be from a UK payment account to another UK account eligible for FSCS protection. Excludes "me-to-me" payments (transfers between a customer's own accounts).*

A multi-lateral agreement for cVRP and an Operator

The introduction of cVRP requires a standardised framework to ensure consistency, interoperability, and trust among participants. A Multilateral Agreement (MLA) will provide this framework by setting out the common rules, obligations, and governance structure that apply to all parties involved in cVRP transactions.

It defines the rights and obligations of the parties, ensuring that cVRP transactions are processed in a secure, efficient, and consistent manner, and that all PISPs and all ASPSPs are treated in a consistent way by all other parties. By establishing common access requirements, technical standards, dispute resolution mechanisms, and liability frameworks, the MLA will help prevent market fragmentation and facilitate the smooth adoption of cVRP across the industry.

To ensure the effective implementation and enforcement of the MLA, an Operator is required. The Operator is responsible for the day-to-day administration of the agreement, managing

4 Excludes 'me-to-me' payments (transfers between a customer's own accounts), which will be considered separately under the MLA.

5 Excludes 'me-to-me' payments, and cases where the cVRP used to retroactively adjust how a purchase was paid for, or the account is set up to automatically forward the received payments to another account.

6 Excludes outsources third-party providers (i.e. private company contracted to manage certain public services).

participation, ensuring compliance with established rules, and overseeing technical and operational processes. Additionally, the Operator plays a key role in adapting the MLA to regulatory and market developments, ensuring that the framework remains fit for purpose. The FCA and PSR have determined that Open Banking Limited (OBL) will lead the work to establish an independent central operator of the MLA.

Developing a commercial model for Wave 1

In that context, our work focuses on developing a commercial model for **'sending ASPSPs'**. These institutions – defined in the Payment Services Regulations 2017 and including banks and e-money providers – maintain direct relationships with payers (e.g. consumers) and play a crucial role in facilitating cVRP payments. Given the challenges in allowing each sending ASPSP to set its own commercial terms, the PSR has indicated that commercial arrangements for VRP APIs could be established through an MLA involving key industry stakeholders, subject to further consultation and competition law considerations.

The scope of our work is to develop a commercial model for sending ASPSPs that could be incorporated into an MLA overseen by the Operator, subject to competition law requirements. Our work has considered the potential methodologies to establish prices and the specific design choices that need to be made. We have gathered data from industry stakeholders which has been used to estimate potential prices under the commercial model.

While the cVRP ecosystem will comprise many participants – such as PISPs, Billers, and the Operator – this analysis specifically addresses the pricing associated with cVRP provided by sending ASPSPs. It is expected that other commercial models in the ecosystem, such as the price PISPs charge to Billers, can be set independently. The rationale for this is covered further in Chapter 4. However, in developing our approach and potential pricing, we consider dependencies on other commercial arrangements (for example, Operator fees) and account for contingent decisions such as the allocation of liability and the scope of services provided by sending ASPSPs. We also factor in the implications of the commercial model for ASPSPs on the adoption by other participants.

Furthermore, our analysis is limited to the 'Wave 1' low-risk use cases, deliberately excluding more complex or higher-risk applications (such as e-commerce transactions) to ensure a streamlined initial rollout that promotes early adoption and robust market confidence. Work is underway in parallel by UK Finance to consider the commercial model for later Waves.

Structure of this paper

This paper sets out the potential options for a commercial model for cVRP and the associated trade-offs that need to be considered when setting a price. The paper is structured as follows:

- **Chapter 3** outlines the principles set out by the FCA and PSR which we use to evaluate pricing options.
- **Chapter 4** describes our approach to developing the commercial model.

- **Chapter 5** summarises stakeholder views on the adoption of Wave 1 use cases, ASPSP costs, and potential pricing structures.
- **Chapter 6** examines different methodologies for determining the level of pricing at a high level, evaluating value-based and a cost-based approaches.
- **Chapter 7** details a cost-based approach to cVRP pricing, outlining cost components, return mechanisms, relevant comparators, and investment incentive.
- **Chapter 8** provides an overview of competing payment options (i.e. card on file and Direct Debit), comparing their value chains and the total charge imposed on billers.
- **Chapter 9** explores the key more detailed design choices for the commercial model, considering:
  - who should be charged;
  - whether agreements should be multilateral or bilateral;
  - what pricing structure should be applied;
  - how pricing could change over time; and
  - how to incentivise good ecosystem behaviour.
- **Chapter 10** explains our modelling approach and resulting pricing options.
- **Chapter 11** concludes with our recommendations for pricing options and the implications that need to be considered by the Operator.

Defining terms

In our report we use a number of industry labels and acronyms, with the key ones defined as follows[7]:

- **Payer**: Payers hold a payment account with an ASPSP, from which they can authorise and initiate payment transactions to payees. Payers can also provide consent to regulated third party providers, such as PISPs, to initiate payments from the Payer's payment account.
- **Biller**: Billers provide goods or services to the Payer in exchange for the relevant cVRP being made.
- **PISP**: Payment Initiation Service Providers are responsible for initiating payment transactions on behalf of the Payer. In the context of cVRP, PISPs are responsible for submitting cVRP Mandate parameters to the ASPSP and initiating commercial cVRP payments, within those parameters, in accordance with the cVRP Mandate and the cVRP Payer Services Agreement.
- **ASPSP**: an Account Servicing Payment Service Provider offers a payment account that is accessible online to the Payer under a framework agreement. This allows PISPs to establish cVRP Mandates and initiate cVRP transactions from that payment account. The functionality is facilitated through cVRP APIs which ASPSPs develop and make available to PISPs (and cVRP-TSPs) to connect to.

[7] These definitions are taken from the cVRP Rulebook Version 1.0, 30 January 2025.

- **TSP**: a Technical Service Provider is an entity which provides technical services that are not regulated financial services activities. For the purposes of the MLA, a cVRP-TSP is a TSP which provides the underlying technological infrastructure to enable a secure API integration into an ASPSP's APIs on behalf of one or more PISPs. A cVRP-TSP may also provide other technical services, such as information technology and communication infrastructure and storage of data, which also enables, but does not constitute, Payment Initiation Services.
- **Multi-Lateral Agreement (MLA)**: the MLA will be an agreement between participating ASPSPs and PISPs. It will set a range of conditions and requirements for participants that will help to ensure that there is consistent functionality and service. The commercial model that is the subject of this work would be taken up as part of the MLA.
- **Operator**: the entity responsible for maintaining, developing and administering the MLA, and related standards and infrastructure to facilitate the functions of cVRP and including any successor body.

3 Key principles for the commercial model

The PSR and FCA have set out and shared with us six principles[8] to guide a pricing exercise for cVRP. These principles have been designed to inform the price for Wave 1[9], and seek to provide clarity on the types of considerations that are appropriate when producing pricing recommendations. They are drawn from the previously published JROC premium API pricing principles, but have been minorly amended to provide further guidance.

The PSR and FCA have stated that the principles might not be exhaustive and that their application should always be subject to competition law considerations. Moreover, it might not be possible to meet all principles simultaneously, in which case any trade-off between principles should be clearly explained and motivated.

Below are the six principles and the guidance from the PSR and FCA on what they expect of our analysis:

1. **The price proposed should broadly reflect relevant long-run costs** incurred by ASPSPs in providing access to cVRP. This principle emphasises cost recovery in the long run rather than a given point in time, to help ensure the access price is not a barrier to adoption of Phase I cVRP (see principle 3). Furthermore, the focus should be on the recovery of efficiently incurred costs that are attributable to cVRP and an appropriate profit margin (see principle 2).

   The consultant should explain what types of costs they have included in their calculation of a price and why, what costs were excluded and why, how they have ensured their analysis takes account of efficiently incurred costs, and how their approach reflects the long-run recovery of costs.

2. **The price proposed should incentivise investment and innovation in cVRP.** It should enable efficient ASPSPs to make a profit over the long run that compensates them for the associated risks and rewards them for their innovations and associated investment that bring benefits to end users.

   The price should also ensure PISPs have incentives to invest and innovate, and should not prevent investments or innovations that would benefit businesses or customers.

   The consultant should explain whether the price includes a specific return for ASPSPs, and if so, how it was calculated and benchmarked. The consultant should also explain why they think the proposed price incentivises investment and innovation in cVRP by ASPSP and PISPs.

8 FCA and PSR, Principles for an industry-led pricing exercise to determine VRP API access pricing, February 2025.

9 The PSR and FCA have indicated that these could be extended to other cVRP Waves.

3. **The price proposed should incentivise cVRP adoption by consumers and businesses to help enable network effects.** Pricing in a way that encourages the widespread adoption of cVRP across customers and businesses will be crucial to maximising its benefits. This is relevant when making decisions about the level of prices, and also the structure of prices (e.g. percentage-based or a price-per-click charge).

   The consultant should demonstrate that the price proposed will promote adoption by consumers and businesses, for example with references to surveys they have undertaken of willingness-to-pay or market research.

4. **The price proposed should treat sending firms and PISPs fairly, without favouring or disadvantaging some against others.** The price should not distort market competition by giving certain PISPs unfair competitive advantages over others. This means that any differences in prices charged by ASPSPs to different PISPs need to be substantiated by an objective justification, for example where there is evidence of differences in underlying efficient costs.

   The consultant should justify any aspects of the pricing structure that may mean different PISPs pay different prices (e.g. volume discounts) and explain why it does not contravene this principle.

5. **The price proposed should be transparent and simple to understand, including for PISPs.** It should be straightforward to calculate the fees PISPs are liable for and the revenue ASPSPs will receive to help ensure certainty and promote investment.

   For example, the consultant should obtain feedback from PISPs and ASPSPs on whether they find it simple to understand the proposed pricing structure.

6. **The methodology underlying the price proposed should be transparent and clear.** The process through which the price was arrived at should be made known to ASPSPs and PISPs, subject to competition law considerations. Any trade-offs made between the different principles should be made clear to participants.

The chapters that follow clearly draw from the principles outlined above to define the design choices for the commercial model and how we approach the methodology for determining potential prices.

4 Market context, the need to set a commercial model and approach to our work

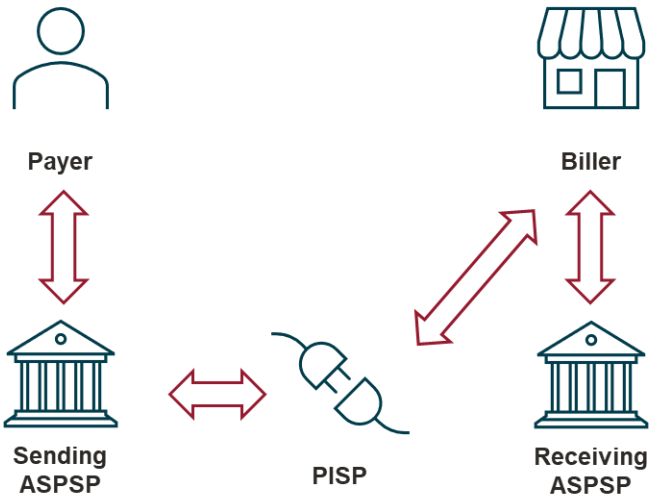
In this chapter we set out the main market context in which cVRP will operate. This context is relevant for considering the role of a MLA and the potential necessity of setting a commercial model. We assess

4.1 Characteristics of the potential market for cVRP

cVRP is like most payment options characterised as a two-sided market. There are payers on one side of the market and billers on the other. There are multiple participants whose services can connect these two sides of the market together. Sending ASPSPs provide to payers, for example, the personal current accounts from which payments can be made. PISPs will hold relationships with billers and facilitate the transactions on the billers' behalf. Billers will also hold a relationship with receiving ASPSPs who provide the payment account in which the payments from payers will be received.

These relationships are summarised in simplified form in the Figure below (recognising that there can be other participants who may be involved in the value chain).

Figure 1 Illustrative overview of the two-sided market for cVRP



Source: Frontier Economics

The most important implication of this market structure is that it is a network. Payers and billers collectively benefit from a greater number of each using and accepting the payment. Successful payment methods such as Direct Debit and card schemes have managed to build such networks. They are widely used and accepted and therefore create a strong rationale for

each side of the market to use that payment method and to bear any associated costs with their participation.

Establishing such a network can be difficult for the same reason: the incentive to join one in its early stages can be at its lowest as few payers or billers may be using the payment option (benefits are low) and may be outweighed by the costs of participation. If the aim is to develop cVRP into a viable and competitive alternative to existing payment options then a central challenge is how best to develop such a network.

In order to develop a network for cVRP there are at least two key conditions that need to be true:

- **Participants on each side of the market need an incentive to invest in and adopt the new payment method.** This principally means sending ASPSPs who hold the relationship with payers and PISPs who facilitate the transaction on behalf of the Biller.
- **Payers and Billers need to be willing to adopt the new payment method in lieu of alternatives.** They will do so within the context of any costs they incur for adoption alongside any benefits they receive relative to their existing alternatives. The benefits of adoption will rise as the network grows and cVRP is being used more widely.

These considerations are set out in further detail in the Table below for the main four participants: sending ASPSPs, PISPs, Payers and Billers.[10]

Table 3 Role of adoption and incentives for each key cVRP participant

Participant	Role in adoption	Primary incentives
Sending ASPSP	■ Required to invest in and operate cVRP to allow payments to be taken from Payers' accounts. ■ May have a role in promoting and encouraging Payers to adopt cVRP. ■ Provide customer support which will be an aspect of 'quality' of cVRP that may influence uptake by Payers.	■ The return earned on providing cVRP services. ■ Demand for such services from Payers. ■ Relative returns earned on alternative payments that may be substitutes to cVRP.
PISP	■ Required to invest in and operate services to allow Billers to accept cVRP payments. ■ Promoting cVRP with Billers and onboarding them.	■ The likely return earned on providing cVRP services, including the price that can be charged, costs incurred and volumes of transactions that are using cVRP.

[10] Others in the value chain such as receiving ASPSPs or TSPs may have some role in the adoption of cVRP, but the key dynamics can be captured by focusing on these four groups of participants.

Participant	Role in adoption	Primary incentives
Payer	■ Must choose to use cVRP over any other offered alternatives.	■ The ease and convenience of cVRP compared to alternatives. ■ Any applicable costs or rewards for using cVRP compared to alternatives. ■ Confidence and trust in cVRP as a secure way to make payments.
Biller	■ Must choose to offer cVRP as an alternative to existing payment methods.	■ The cost of adopting cVRP. ■ The ongoing cost of cVRP compared to alternatives. ■ The number of potential customers who could use cVRP. ■ The value of any additional functionality that cVRP provides.

Source: Frontier Economics

For both ASPSPs and PISPs there are commercial considerations relating to the return they can earn by providing cVRP. That depends on the costs of their services and the revenues they can generate. The latter grows as cVRP expands and so the incentive for adoption is likely to be lowest at the outset. To the extent that cVRP is a substitute for existing payment options ASPSPs and PISPs may also consider the relative returns that they can earn from cVRP compared to alternatives.

4.2 The value of a multi-lateral agreement

Considerations around adoption have been part of the backdrop to the industry and regulatory debate as to how best to develop cVRP. Those debates have coalesced around the value in having a multi-lateral agreement (MLA) between the two sides of the market (sending ASPSPs and PISPs). The MLA will provide a number of things including setting participation requirements, technical requirements, dispute mechanisms, liabilities and so forth. Such an MLA has parallels with the 'scheme' operated in card payments.

The value of the MLA is that it can provide standardisation across the network. The alternative is bi-lateral agreements between potential participants with the difficulty that this could entail many different such agreements for each participant pair and that the terms of each could vary. This could lead to:

- Higher costs for PISPs and ASPSPs who need to reach multiple agreements to build a network. In competitive markets we would expect such costs to be borne by the ultimate consumers, which may make cVRP less competitive and disincentivise adoption by billers and/or payers.

- Barriers to entry for any new PISPs or ASPSPs who wish to offer cVRP services. Each new entrant needs to sign their own bi-lateral agreements in order to construct the network for themselves. This is both costly and in time may place such new entrants at a disadvantage as they may not be able to (or may take some time) to offer the same coverage as established providers.
- Fragmentation in the services across the network. In principle each ASPSP and PISP pair can agree their own approach to technical standards, customer protections and so forth. This is likely to be highly unattractive to billers and payers who are likely to struggle to know what service they are receiving. For example, customers could receive different protections depending which ASPSP and PISP their transaction happens to be carried out under. This is likely to make cVRP much less attractive compared to the clear and consistent protections they receive under existing options such as Direct Debit or debit cards.

In sum, an MLA is likely to reduce costs and provide a stronger incentive for both Billers and Payers to adopt cVRP. Open Banking Limited (OBL) is therefore in the process of developing the MLA and establishing the Operator who will manage it.

4.3 The value of setting a commercial model within an MLA

The commercial model that each participant is able to operate is an important factor in whether they have an incentive to adopt cVRP. There is as such a critical question as to whether the MLA sets commercial models for participants or whether they are left to bi-lateral negotiation. In theory the MLA could seek to set commercial models across one or more parts of the value chain. The commercial model could in principle attempt to set the commercial model for any or all of sending ASPSPs, PISPs, receiving ASPSPs or TSPs. The latter two can be more readily discounted on practical grounds as receiving ASPSPs and TSPs are not necessarily party to the MLA.[11]

It is common in markets for commercial models and associated price setting to be left to participants to develop and set. Broadly speaking, this allows for a competitive process to determine the most appropriate commercial model and associated price. There are however rationales for why a commercial model could be incorporated as part of an MLA. These rationales include:

- **Scalability and efficiency**: by lowering the effort required to reach agreements, incorporating commercial models into an MLA can exclude the need for multiple negotiations. This may be particularly beneficial during the initial stages of rollout, as it can minimise friction and facilitate broader market participation.

[11] It is the case that sending ASPSPs and receiving ASPSPs can be part of the same entity. For example, a bank that offers current accounts and business accounts could be both a sender and a receiver. This is not always true as a receiving ASPSP can solely provide business accounts. Likewise, larger merchant accounts will typically be held by Corporate banks which even if part of a wider group will operate separately and have legal distinctions from a retail bank holding Payer accounts.

- **Predictability**: multi-lateral approaches can establish clear and consisting pricing, which can reduce uncertainty and promote long-term investment among all participants, particularly in the early phases of adoption.
- **Level playing field**: setting a common price reduces the impact of any differences in bargaining power that may exist.

These rationales can lead to greater cost efficiencies, encourage adoption and also promote competition in the wider value chain. The latter effect can arise through a level playing field reducing barriers to entry and allowing smaller participants to compete against larger incumbents. These effects need to be balanced against the downsides that can exist with setting prices, including the risk of inefficiency if prices do not reflect competitive outcomes or if setting prices dampens competition.

The question is the extent to which these arguments may apply to setting prices for ASPSPs or PISPs as well as the alignment to the PSR and FCA's principles. The case for setting prices for PISPs is likely to be weak given there are limited benefits in scalability and efficiencies in setting a price for PISPs. PISPs will still need to hold bi-lateral arrangements with Billers (their clients) regardless of whether prices are set by the MLA. There is also little precedent that we are aware of for setting prices for PISPs or their equivalents in other payment systems.[12] For these reasons we have excluded further consideration of setting PISP commercial models within an MLA and we expect that PISPs will be able to set their own commercial models.

There are however precedents for interventions in the pricing of sending ASPSPs in other payment methods. The most notable are interchange where prices are capped by legislation. Likewise, the EU's SPAA framework provides a set of 'fallback' prices for ASPSPs to charge PISPs. There are stronger reasons for such interventions. By incorporating the commercial model into an MLA the requirement for bi-lateral negotiation (and associated cost and complexity) between ASPSPs and PISPs is entirely removed. Setting the commercial model in an MLA will also remove the potential significant imbalances in bargaining power between ASPSPs and PISPs and between incumbent and new entry PISPs.

We are aware of the ongoing interchange litigation in the UK. This report does not opine on the question of whether, or how, the commercial solution could be adopted in a way that complies with competition law. We understand that the PSR is considering this question.

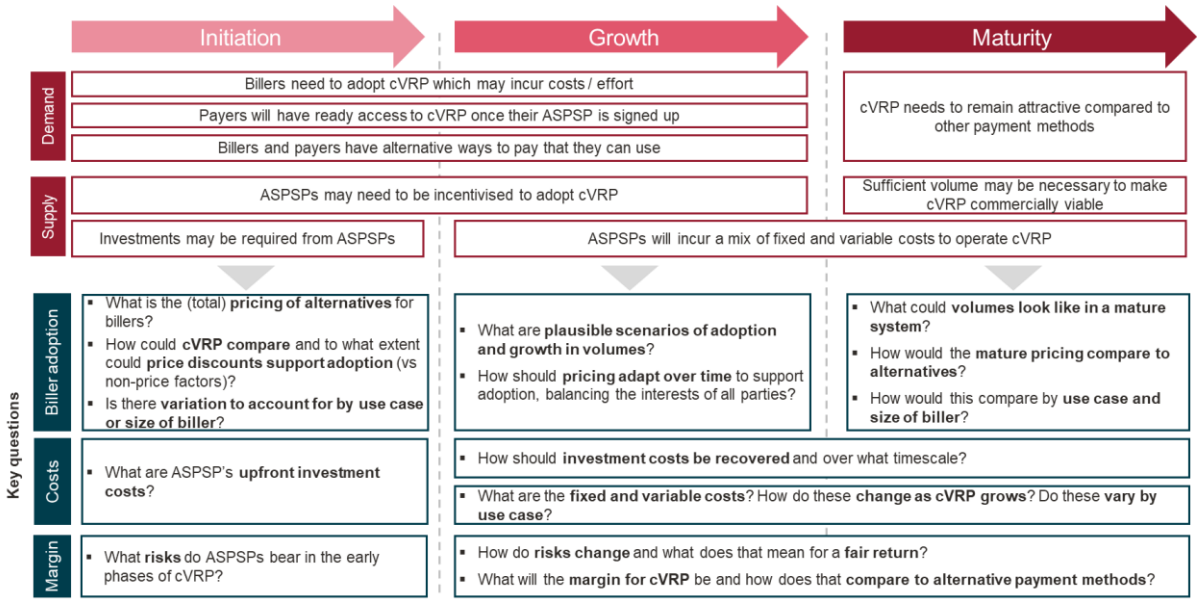
In Chapter 9 we provide a more detailed assessment of the rationale for setting a price for ASPSPs in the MLA and assess it relative to a bi-lateral approach. We consider whether the approach should be to set a price or provide a 'fallback' and also consider which set of participants should be charged under a commercial model for sending ASPSPs.

12 For example, in card schemes the nearest PISP-equivalent acquirers are able to set their own commercial models principally based on charging Billers for their services.

4.4 Our approach to setting a commercial model

Given the above discussion our focus in this work is on developing a commercial model for ASPSPs that can be incorporated into a MLA. We conducted our analysis by first defining the key questions that needed to be addressed. These questions were structured to reflect the interplay between demand and supply, adoption, costs, and margins at different stages of cVRP development – initiation, growth, and maturity. The key questions we identified are summarised in Figure 2 below.

Figure 2 Market dynamics that impact the pricing of the commercial model for ASPSPs over time



Source: Frontier Economics

Defining the key issues

Understanding the commercial viability of cVRP required a structured approach to identifying challenges and opportunities at each stage of adoption. Our framework recognises that adoption will depend on both sides of the market and pricing for ASPSPs needs to account for all of these factors. To that end we have considered:

- **Demand**: billers and payers will need an incentive to adopt cVRP and will consider the cost and effort of adoption, the benefits of doing so and the alternative payment methods available to them; and
- **Supply**: ASPSPs will be supplying a service to users of cVRP which will require investments and costs to provide. As businesses they too will consider the incentives they face to provide the service, including the margin they may earn.

Considering each side of the market naturally translated into three broad issues we need to consider:

- **Adoption**: what factors will influence the adoption of cVRP among billers and payers, the role of pricing and the pricing of alternatives to cVRP, plausible scenarios for growth, and how all of these vary based on use case and merchant size;
- **Costs**: understanding ASPSPs' upfront investment costs, ongoing costs and how the latter may change as cVRP scales; and
- **Margins**: what return may be fair for ASPSPs to earn to reward them for providing cVRP, incurring costs and the associated risk that they take.

The combination of these issues will guide the price for ASPSPs that can best balance the respective incentives of different parties in the ecosystem and maximise the potential for cVRP to be successful.

Uptake of cVRP will also rely on others in the wider value chain choosing to provide their services. In particular, PISPs will need to invest and operate services to facilitate Billers acceptance of cVRP payments. As noted in Table 3, PISPs will consider the costs they incur, margins they can earn and their expectations of the potential for cVRP to grow. The price that ASPSPs charge will be an important consideration given it will influence the price competitiveness of cVRP and hence the potential for adoption by billers.

As the scope of our work is focused on setting an appropriate price for ASPSPs we have not considered the economics of PISPs in detail. Our analysis does however seek to account for the role of PISPs and we make assumptions about plausible values they may charge when we assess the total price that may be charged for cVRP and how this compares to alternatives. This is discussed in further detail in Chapter 10.

Our approach

We have adopted a multi-faceted approach to address these issues and to develop options for a commercial model that will maximise the opportunity for a successful rollout of Wave 1 cVRP:

1. **Guiding principles**: our approach has been anchored in the principles for pricing cVRP set out to us by the PSR and the FCA. These principles provided a framework for fair, transparent, and sustainable pricing, against which we have evaluated potential methodologies for setting price and more detailed design choices.
2. **Stakeholder engagement**: we have conducted a series of interviews with key market participants, including ASPSPs, PISPs, and billers. These discussions have helped us gather industry perspectives, understand practical adoption challenges, and refine the implications of different pricing structures.
3. **Desk research**: to supplement our interviews, we have undertaken targeted desk research to fill information gaps. This has included reviewing regulatory guidance,

literature on relevant methodological approaches, applications of price setting in payments in other jurisdictions, the value chains and pricing of competing payment methods, and financial statements of potential comparators for the margin in a cost-based approach.

4. **Data requests**: we sought data from ASPSPs, PISPs and Billers to gather quantitative insights into investment and ongoing costs required to develop and run cVRP, the volumes of existing payment alternatives, and the value and pricing of competing payment methods.

By synthesising the insights gained from stakeholder interviews, desk research, and data submissions, we have developed a set of pricing options. Chapter 10 provides the detail of this analysis.

5 Insights from stakeholder interviews

We conducted a series of interviews with key market participants, including 7 ASPSPs, 5 PISPs and 4 Billers. These discussions covered the largest ASPSPs in the UK and a representative of a 'neobank' (digital-only provider). The PISPs included some of the largest providers of Open Banking services in the UK. Billers included representation from Government, large utilities and a large financial services firm. These discussions helped us gather industry perspectives, understand practical adoption challenges, and refine potential pricing structures for Wave 1 cVRP.

We sought stakeholder views on two main themes:

1. **Adoption:** the potential adoption of Wave 1 use cases for different use cases and billers; the size of the addressable market, and the role of pricing for adoption.
2. **Costs:** the required upfront investment and ongoing costs for ASPSPs to implement and operate cVRP; the structure of costs (fixed, variable) and implications on pricing.

We have heard broadly consistent views across the two themes, as set out below. These views have been factored into the data requested on costs from ASPSPs and to the adoption scenarios we set out in Chapter 10.

5.1 Adoption of Wave 1 use cases

There was a broad consensus that the adoption of Wave 1 will vary significantly across use cases:

- **Financial services are likely to be a key early use case.** Regular transfers to investments, pensions, and currency accounts are all plausible use cases for Wave 1. Billers may in particular seek to replace card on file transactions with cVRP.

- **Government (local and central) could be an early adopter, but this would require a concerted effort.** Government could adopt cVRP to support the wider objective of facilitating the growth of a new payment option (e.g. in paying self-assessment tax or council tax). However, there may be long-term contracts that limit the ability for Government to rapidly switch to cVRP in the short term.

- **Utilities are unlikely to be significant early adopters of cVRP and are unlikely to promote it as a default.** DDs generally work well and are highly cost effective. Utilities would also be relatively risk averse and will refrain from using cVRP until it has demonstrated its capability and reliability. Stakeholders did note that there may be specific instances where utilities could experiment with adopting cVRP, particularly where there are failed DDs (which can be costly), or if helpful for vulnerable customers.

- **Other use cases such as for charities and railways could adopt cVRP, but these may be smaller in scope.** Stakeholders generally had less strong views on these use cases.

In addition to the likely adoption across use cases, there were a number of key points made by stakeholders that will influence the overall level and rate of adoption of Wave 1:

- **Billers are unlikely to try and switch customers from existing payment options that are working well.** Instead, adoption is likely to take the form of providing the option for cVRP when onboarding a new customer or when it is necessary to change a payment method. This will constrain adoption to the "flow" of such new payment instructions.

- **Adoption rates may be highest among small and medium sized billers.** For them, existing payment options may be relatively expensive due to higher upfront costs and low volumes. Given their size, their contribution to overall volumes may still be relatively small.

- **Growth rates for cVRP are highly uncertain.** Stakeholders pointed to the growth of Open Banking payments as one proxy, and some stakeholders argued that growth might be higher as Open Banking has helped to 'normalise' such alternative payment methods. There was still a general view that adoption would take time and it may be at least 3-5 years or more before there are significant volumes of payments.

Finally, in terms of factors that will influence adoption we heard that:

- **Pricing is seen as a critical factor in driving adoption as most billers prioritise cost considerations**. It was often emphasised that what matters is the 'all-in' or total cost to billers. This includes all aspects of the value chain of each payment method, as well as the initial cost of adopting a new payment option.

- **Several PISPs argued that it will be essential to have broad ASPSP coverage.** Billers are much less likely to have interest in incurring the effort and expense of adopting cVRP if they are only able to provide the service to a small subset of their customer base.

- **cVRP may have indirect benefits, but lack of certainty may be a limiting factor**. cVRP may provide indirect benefits such as cost reductions from handling fewer failed payments (which can impose direct fees and additional customer service costs). Such reductions might come about if customers have greater visibility through the mandates used by cVRP. Billers may factor that into their decision to adopt, but this is unlikely to be a key driver early on as such benefits are not yet proven.

- **Billers will value certainty in pricing when considering adoption**. Billers will have to bear some cost and effort to provide cVRP. As such, certainty over the price they will be paying will make it more likely that they undertake such costs. That suggests that care should be taken to ensure that there is as much as clarity as possible about likely future prices and price changes generally being kept to a minimum.

- **Other considerations are secondary to price**. cVRP functionality such as near-instant settlement is a clear advantage over batch settlement offered by Direct Debit. However, these benefits will be unlikely to outweigh any material difference in price.

- **There may be cases where the new functionality of cVRP creates challenges or new costs for billers.** One example is the requirement for mandates (setting the limit on how much a customer may pay) and the requirement for customers to approve changes. Today, a biller such as a utility can unilaterally amend the amount that a customer pays.[13] Under cVRP this may get more complicated. A biller can increase payments up to the mandate at which point they require customer permission to change the mandate. Such permission may not always be easy to obtain and this may become an issue as mandates age (and inflation erodes the value) or usage varies. Mandates for higher values can delay or limit the issue, but billers may need to balance asking for higher value mandates with the risk that it puts customers off from using cVRP.[14]

Our main conclusion from what we heard is that the (total) price of cVRP to billers will be an important driver of adoption, particularly in the early phases of rollout.

5.2 Costs for ASPSPs

Our discussion with ASPSPs highlighted a range of likely upfront investment and ongoing running costs for Wave 1 cVRP:

- **Upfront costs** involve developing the new API, supporting operational readiness (i.e., training, communications, specification changes, etc.), and setting up dispute processes, controls and other arrangements to comply with the MLA.

- Many ASPSPs but not all ASPSPs have made significant investments in Open Banking, upon which cVRP will build. ASPSPs that do not currently provide Open Banking would face higher upfront costs to provide cVRP. They would need to invest in Open Banking alongside the 'increment' for cVRP.

- **Ongoing costs** will include future changes to features or standards, operational costs of disputes, platform overheads, MLA charges, FPS costs, and any consumer protections and associated liabilities. As volumes increase with adoption, additional investments may be needed to increase functionality and capacity.

Stakeholders also noted or recognised the following points:

13 Billers must adhere to the Direct Debit Guarantee rules, which require providing the payer with prior notice – typically at least 10 working days in advance.

14 For example, if a customer is presented with a mandate for up to £500 for their utility bills, this might frame for them a potentially very large expense. It may not be unreasonable to expect customers to be reluctant to provide such a mandate.

- **Upfront investment costs and further development costs are likely to be applicable to Wave 1 and later Waves**. Many of the upfront costs incurred to deploy Wave 1 will be relevant for the deployment of later Waves. Recovery of these costs could consider how it is spread across Waves, rather than attempting to recover it entirely from Wave 1.

- **Several PISPs told us that ASPSPs should not recover the investment costs for mandated OB infrastructure** (i.e. sweeping VRP) but only the incremental costs specific to cVRP. No stakeholders argued that these costs should be recovered through cVRP.

- **The approach to pricing should reflect differences across Waves.** Stakeholders noted that costs are likely to be different across Waves. Liability and disputes are likely to be greater for later Waves and any methodology should recognise those differences.

- **It is important to ensure that costs reflect what an efficient ASPSP incurs.** There is a risk in any approach that costs become inflated, reducing the competitiveness of cVRP and potentially harming adoption.

5.3 Other views about pricing

Some stakeholders also provided views on the most appropriate pricing structure for Wave 1 cVRP:

- **For Wave 1, a pence per transaction pricing model may be most appropriate**. This was the predominant view among those who provided feedback on the pricing structure, primarily PISPs and some banks. The variable costs per transaction may be relatively fixed as lower risk use cases will have fewer liabilities connected to value. Other models (such as pricing on a bps basis) may be appropriate for higher risk use cases of cVRP encompassed by later Waves.

- **There may be some value in setting a tiered pricing structure.** From a competitive perspective, prices tend to fall with volume and so following a similar approach may provide the best positioning of cVRP.

- **Pricing could take a 'layered' approach to meet different objectives**. One stakeholder set out views around potential 'layers' of a commercial model for ASPSPs. They suggested that there could be four such layers: (1) cost recovery; (2) margin; (3) incentives for innovation; and (4) "ecosystem incentivisation". (3) would be intended to allow ASPSPs to charge a higher price for additional (innovative) services, with PISPs and billers freely able to choose to purchase them alongside the "core" service. (4) relates to setting pricing based on the behaviours of other actors including PISPs. Pricing would be dependent on an assessment of the effectiveness of behaviours / actions that are relevant for the wider costs of the system (e.g. vetting billers), rewarding PISPs that are most effective at doing so.

5.4 Conclusions

Our discussions with stakeholders have provided helpful perspectives on the key issues we need to consider with designing a commercial model for Wave 1 cVRP. The key take-aways we have factored into our analysis are:

- **Wave 1 volumes are likely to be limited, especially in the early phases of rollout.** Uptake will be constrained by potentially limited appetite from many high volume billers such as utilities. Uptake will also be constrained by billers being unlikely to ask all customers to switch, meaning it is important to focus on the 'flow' of new payment instructions.
- **There will be upfront costs to the implementation of Wave 1 cVRP for ASPSPs.** There will also be ongoing fixed and variable costs that ASPSPs will incur to operate cVRP.
- **Pricing is important for the adoption of cVRP.** We do need to consider the relative competitiveness of any price compared to alternatives such as Direct Debits and cards. There may be a range of pricing structures and variations that could make pricing as competitive as possible.

6 Methodology choices for setting prices

This chapter examines the main options available for determining the price *level* in the commercial model for cVRP. Where relevant we have drawn on the pricing methods used by regulators in payments markets and other sectors.

There are broadly speaking two approaches that could be adopted:

1. **Value-based approach**: Prices are set based on the value to beneficiaries.
2. **Cost-based approach**: Prices are set based on the costs ASPSPs incur to provide cVRP.

We evaluate these approaches against the PSR and FCA's principles for cVRP pricing. The main principles relevant for the methodology choice include Principles 1, 2, 3 and 6. Both Principles 4 and 5 can be met by either approach.

On the basis of an assessment against the principles and on the basis of practicality, we conclude that a cost-based approach is most appropriate starting point for considering the pricing of Wave 1 cVRP. Chapter 8 sets out in detail the specific choices that need to be made to implement a cost-based approach.

However, while a cost-based approach can indicate the price required to fairly compensate ASPSPs, it is not the only consideration for the adoption of cVRP. For billers, their incentives to adopt will be influenced by how cVRP prices compare to existing alternatives such as Direct Debit and cards. As such, while we do not develop a formal value-based approach we do consider the relevant prices of such alternatives. Chapter 7 sets these prices out and the potential constraints they impose are considered further in our assessment of potential prices for cVRP.

We consider both approaches in our assessment of potential prices in Chapter 10.

6.1 Value-based approach

Value-based approaches determine pricing based on demand factors. These methods consider what price beneficiaries would be willing to pay on average, typically considering benefits and cost savings compared to the next best alternative. Value can also be understood from the current prices of similar products, as customers' willingness to pay is an important determinant of price.

The Merchant Indifference Test (MIT) is a value-based methodology used, for example, to determine the interchange fees for card payments.[15] The MIT assesses the incremental value

[15] The European Commission used the Merchant Indifference Test to set the interchange fee for cards, considering the variable cost savings to billers (merchants) from card transactions compared to cash transactions, and the level of interchange that creates indifference between accepting cards and cash. While an MIT has not been used to compare alternative payment methods so far, it could be applied in principle by comparing indifference points to billers.

that one payment type brings a biller (merchant) compared to another, typically considering cost savings, but also potentially including additional benefits such as enhanced security or higher transaction completion rates. The interchange fee is then set to make the merchant indifferent between payment types, aligning the fee with the incremental value for beneficiaries (billers). In simple terms, the MIT is an indifference test between payment types.

Table 4 summarises our evaluation of value-based approaches more generally.

Table 4 Value-based approach: evaluation summary

Principle	Evaluation	Details
1. Reflect long-run costs		Value-based approaches are not directly linked to costs and can (potentially) significantly exceed or fall below cost of provision.
2. Incentives for investment and innovation		Value-based approaches can provide a strong incentive for investment and innovation that improves service quality, so long as that enhanced value can be measured and captured in the price.
3. Incentives for adoption		By considering the value that beneficiaries receive, a value-based approach should guide the price that incentivises adoption from billers. But this may vary across billers and may not align with pricing that would be attractive to early adopters. The price may also not be sufficient to incentivise adoption from ASPSPs if the value that incentivises adoption from billers is below the cost of provision.
4. Pricing should treat sending firms and PISPs fairly		While in principle prices could be set to vary by PISP / biller (and the associated value), it is possible and more feasible to set a uniform price that does not advantage any type of firm.
5. Pricing should be transparent and simple		Pricing can be made more complex in order to accommodate different objectives but can have a structure that is transparent and simple.
6. The methodology should be clear and transparent		While the general idea of value-based approaches is fairly simple, it can be very complicated to implement.

Source: Frontier Economics assessment against the FCA and PSR's principles

Value-based approaches are broadly aligned with Principles 2 and 3 (incentivising investment, innovation and adoption). By considering the value that beneficiaries receive, value-based approaches should produce a price that incentivises billers to adopt the service. These approaches can also provide a strong incentive to encourage ASPSPs to invest to improve the product, since the value they create can in theory be factored into the price.

Value-based approaches are not directly linked to costs, which is in tension with Principle 1. If value and prices are high relative to costs, then higher-than-competitive returns could be generated to ASPSPs and impact prices that beneficiaries pay. Conversely, if prices are too low relative to long run costs, providers will be disincentivised from providing and improving cVRPs, or it could become commercially unsustainable.

However, the main weakness of this methodology in its most formal application is its complexity in implementation. There are several reasons for this related to the nature of cVRP and the payments market:

- **Value is hypothetical:** Since cVRP is not yet an established and widely used product, beneficiaries cannot accurately determine its value or their willingness to pay. Any value measure will be formed on an expectation of what cVRP could look like, which introduces a great deal of uncertainty.
- **Value is influenced by market conditions:** Value-based approaches typically consider established products as a way to determine value. An inherent issue with this is that cost savings are conditional on the current market prices and conditions, which can evolve over time.[16] This creates particular challenges for novel products, as valuations and prices may adjust to new competitive dynamics once cVRP is introduced.
- **Measuring value is always challenging:** Methods to estimate the value to beneficiaries can be complex and always risk inaccuracy or uncertainty. For example, stated preferences in surveys often differ significantly from the true or revealed preferences observed in real-world situations.[17] This discrepancy can make results uninformative. Methods like choice experiments[18] can provide more accurate insights into true preferences, but are also more complex to design and conduct.

A simple alternative to measuring the value of cVRP directly is to consider the prices that billers are paying for their existing payment methods. For example, the 'all-in' price that billers pay for cards or DDs could be used as a proxy for value (assuming cVRP offers a similar service / functionality). With this assumption the price for ASPSPs could be set by using a "retail minus" methodology. This takes such prices and subtracts all avoidable costs of downstream activities (e.g., acquirer costs, receiving ASPSP costs).

While this is simpler than attempting to measure value of cVRP directly it still may not lead to alignment with costs. There are also significant practical challenges that remain given that pricing is highly complex and varied in payments and data on costs in the value chain are not readily available.

6.2 Cost-based approach

A cost-based approach would instead set prices for ASPSPs based on an estimate of the relevant costs for providing cVRP services, and allow for an appropriate remuneration to

16 There is also a debate about appropriate comparators. For example, in their the cross-border interchange paper, the PSR argues that indifference tests can only use comparators that don't have their own interchange fee (e.g. cash or FPS/SEPA), partly to avoid this effect of current market pricing.

17 See: De Corte, Kaat, John Cairns, and Richard Grieve (2021). Stated versus revealed preferences: An approach to reduce bias. *Health economics* 30, no. 5.

18 These are designed to ask participants to choose between different options, helping to quantify how much value they place on different features in near real world settings. See: Alpizar, Francisco, Fredrik Carlsson, and Peter Martinsson. (2001) Using choice experiments for non-market valuation." *Working papers in economics/Göteborg University, Dept. of Economics; no. 52*.

compensate for the activity. In payments, this method has been used to inform the price of premium APIs features in the EU.[19] Cost-based approaches are also commonly used to set prices in regulated industries such as energy, water, aviation and telecommunications.[20]

Table 5 Cost-based approach: evaluation summary

Principle	Evaluation	Details
1. Reflect long-run costs		Prices are set based on the cost of provision, and can be done to reflect long-run costs.
2 Incentives for investment and innovation		Cost-based approaches can be compatible with mechanisms that encourage innovation and investment. These approaches typically allow for a return to be earned, which can incentivise investments and innovations but only so long as they directly facilitate and lead to greater usage.
3. Incentives for adoption		Covering costs and earning a return in principle provides an incentive for ASPSPs to provide cVRP. However, ASPSPs will also consider the returns they earn on any substitute payments. Whether billers are incentivised to adopt will likewise depend on the value and price of substitutes.
4. Pricing should treat sending firms and PISPs fairly		Pricing could be varied by PISP / biller to reflect costs, but it is more feasible to set a price that is constant.
5. Pricing should be transparent and simple		Pricing can be made more complex in order to accommodate different objectives but can have a structure that is transparent and simple.
6. The methodology should be clear and transparent		The basis of pricing is clear but cost-based exercises can be complex to ensure costs are fairly allocated. The exercise is also generally a 'black box' with an overall view of costs estimated on the basis of multiple firms. Results can however be replicated and validated.

Source: Frontier Economics assessment against the FCA and PSR's principles

Cost-based approaches are best at aligning with Principle 1. These methods set prices based on the costs of providing the service, including all relevant fixed and variable costs. This is the minimum price that a firm would need in order to sustainably provide a service in a competitive market.

While linking prices to costs does not, by itself, provide incentives for investment or innovation, cost-based approaches typically allow for a return that can serve this purpose. The strength of the incentive depends on how closely investments and innovations are tied to the return earned. Higher returns are likely when investments and innovations lead to greater usage of cVRP. ASPSP investment is crucial for cVRP adoption, as it ensures a reliable service and provides value-added services (e.g., handling disputes).[21] The incentive for innovation is less

19 The European Payments Council has used a cost-based methodology to determine the default prices of premium APIs of the EU Payment Account Access (SPAA).

20 See, for example, Decker, Chris. (2009). Characteristics of alternative price control frameworks: An overview. *Report for Ofgem*.

21 The scope of services expected to be provided by ASPSPs is discussed further in Chapter 9.

clear-cut, as it depends on whether those innovations effectively drive adoption. However, as outlined below it is possible to consider additions to the 'core' cost-based pricing that could facilitate greater incentive for ASPSPs to innovate.

Cost-based approaches can in principle facilitate adoption by ASPSPs and billers, but there are caveats. For both, the relevant incentives for adoption will also be dependent on the pricing and value they can derive from substitutes to cVRP. For ASPSPs this will be the return they can earn on those substitutes compared to cVRP, while for billers it will be a comparison of the total price and value of services they receive. A cost-based approach will not in isolation capture these factors.

From a feasibility and practicality perspective a cost-based approach requires data to be sourced from ASPSPs. This presents a number of challenges:

- **Uncertainty over costs**: Given the novelty of cVRP, cost estimates today carry significant uncertainty. These estimates are based on expectations rather than actual costs, which poses a risk for ASPSPs if they cannot recover costs if estimates are inaccurate. For PISPs and billers, there is a risk of overpaying if the price exceeds the necessary level.
- **Costs are private information**: Cost data is not publicly available. This means the feasibility of a cost-based approach depends on whether firms are willing and able to share this information and compliance with competition law. This approach works best when detailed knowledge of costs, service quality, and demand is available.
- **Efficient costs are not always observable**: Actual costs may not reflect those an efficient provider would incur if the market is not competitive. Since efficiency is not directly observable, mechanisms may be needed to incentivise cost reduction. In financial services, this concern may be less prominent due to high competition among firms, which can drive costs closer to efficient levels.[22]

Despite these issues, the main advantage of a cost-based approach is that, on the basis of being able to obtain cost information from ASPSPs, it is less subjective than a value-based approach, as it relies on more directly measurable parameters. This can enhance transparency in estimates and assumptions and make the approach easier for stakeholders to challenge and replicate.

6.3 Other options to incentivise innovation and investment

The primary methodology options are between value and cost. There are however possible options to tweak either methodology to better accomplish objectives such as incentivising

[22] Payments are provided by many ASPSPs as part of a bundle of services they offer to their customers. For example, banks will provide these services as part of a personal current account. There is as such at a minimum indirect competitive pressure on the efficiency of delivering payment systems. The more cost effectively this can be done the less costly it is to offer a PCA to customers and the more competitive / more profitable the PCA is for a bank.

innovation and investment. Some stakeholders have raised some such possibilities, and they include:

- Adapting pricing so that it is possible to recognise and reward value-adding innovations beyond the 'core' service.
- Adapting pricing so that there are additional incentives on participants to undertake activities that are to the wider competitive benefit of cVRP.

Changes to price to allow for additional innovation or investment would recognise that incentives for such activity could be relatively limited even with a competitive margin. This is particularly true where such costs do not directly translate into higher returns for the ASPSP.

One approach is for parties to agree separate pricing for new services that are additional to the 'core' service provided under the MLA. This could facilitate innovation where there are distinct additional services that ASPSPs can provide and which billers and PISPs may value. Such an approach would also allow billers and PISPs to only purchase the 'core' service. Such approaches may be limited in practice by the willingness of billers to pay for additional services available in only part of the network (i.e. the ASPSPs providing them) and the costs of any bi-lateral negotiation.

Other possibilities such as setting pricing for PISPs based on their activities to reduce cost and drive efficiencies (e.g., through stronger monitoring of billers) can help to promote incentives that benefit the whole ecosystem. This would require detailed work to set a pricing structure that sets the appropriate incentives. Such work is beyond what can be designed within the scope of our work or what could be implemented in the initial roll-out for Wave 1. The value of such approaches also depends on the sets of services and liabilities that each part of the value chain holds. If liabilities and risks (and associated costs) are borne by the parties that can manage them then there may be little need for detailed price setting to create the right incentives.

The Operator could consider these and other designs for later Waves or if and when in the future it chooses to update the commercial model for Wave 1.

6.4 Proposed approach to setting the level of prices

Given the above considerations, in our view the best approach to determining the appropriate level of price for Wave 1 cVRP is to:

- Use a cost-based approach to determine what pricing would be required to ensure that ASPSPs are able to fully recover their costs and earn a normal competitive return.
- Supplement a cost-based analysis with an assessment of the prices for substitutes to cVRP (for Wave 1, a mixture of Direct Debit and card payments). This will account for the incentives for billers to adopt cVRP from a pricing perspective.
- Evaluate whether the price level indicated by a cost-based approach is likely to result in a competitive 'all-in' price for cVRP relative to its substitutes.

- If there is tension between those objectives (incentivising ASPSPs and PISPs / billers), to consider options for the Operator that might best resolve those in ways that will facilitate the adoption of cVRP.

This approach of triangulation means that we have a cost-based approach to set a 'baseline' for the appropriate price for cVRP. The cost-based approach will give an indication of the price necessary to incentivise ASPSPs to invest in and provide cVRP. Comparing these prices (and accounting for other costs in the provision of cVRP) with the 'all-in' price of substitutes will give an indication of whether billers will be incentivised to adopt cVRP. If both conditions are met then there is a straightforward price that can be adopted for cVRP. If one condition is not met (e.g. the cost-based price leads to higher 'all-in' prices than substitutes) then options will need to be considered that may better facilitate adoption (e.g. delaying the recovery of some costs). This will require a judgement to be made by the Operator on the most appropriate price.

In the next chapter, we then set out the detailed methodology considerations for implementing a cost-based approach. In Chapter 8 we then set out estimates of the 'all-in' prices that billers face for Direct Debit and card payments.

7 Cost-based pricing

In Chapter 6, we concluded that a cost-based approach will be the most appropriate starting point for informing the price for ASPSPs' services.

Assessing costs is a common exercise and is extensively used in regulated markets such as water, energy and telecommunications. This chapter outlines the relevant approaches to estimating costs that we can use to consider cVRP.

There are two main issues we need to consider:

- **What are the costs that ASPSPs can recover?** We recommend that an initial price for cVRP Wave 1 should only consider the recovery of direct incremental cVRP costs that are attributable to Wave 1. Shared costs with later Waves may be considered or their recovery could be delayed. Any joint and shared costs with the wider ASPSP business model should for now be excluded given the complexity of accounting for them and the importance of driving the initial adoption of cVRP.

- **What is the remuneration that ASPSPs can obtain from this activity?** We recommend a margin-based approach to providing a return to ASPSPs, reflecting the relatively low investments required to provide cVRP. Comparators in the wider payments market may provide an indication of the appropriate longer-term margins for cVRP.

Our assessment of these issues has informed the approach we have taken to the data collected from ASPSPs on their costs for cVRP and the analysis that we conduct in Chapter 10 on potential prices. Our evaluation of these issues has taken into account the FCA and PSR's principles, particularly in relation to aligning to long-run costs and incentivising adoption.

7.1 Defining recoverable costs

The main economic principle that guides cost-based approaches is that, at a minimum, a firm should be able to recover the incremental costs of the service that they provide. Incremental costs include the fixed and variable costs that are incurred to provide the defined service. In other words, these are the costs that would be avoided if the service was not provided. Not recovering incremental costs would imply that firms operate a service at a loss, which is in the long-run unsustainable.

There are several issues to consider to ensure that ASPSPs are able to fairly recover their costs and have an incentive to adopt cVRP, alongside the wider considerations set out in the FCA and PSR's principles. These include:

- defining the 'increment';
- determining the efficient level of costs;
- attribution of shared cVRP costs; and

- contributions to shared costs.

Our assessment of each issue is set out below.

Defining the increment

Incremental costs are defined as the difference in costs between a scenario where cVRP is provided and one where it is not. We consider the increment to be the costs incurred to make cVRP Wave 1 available and for the operation of cVRP Wave 1 at different volumes. This excludes any additional costs that would be required to operate later Waves of cVRP. It also excludes the costs that are incurred to provide other payments and services and any sunk costs from the development of Open Banking.

A potential complication in considering the increment is that many ASPSPs will already be operating payment methods that are potential substitutes for cVRP, including Direct Debits and cards. The adoption of cVRP may mean that payment volumes migrate from these alternatives. This could have several different effects:

- Variable costs may fall in the provision of DDs or cards at the same time as they may increase for cVRP.
- Overall costs could change depending on the impact on fixed costs to provide additional payment methods and the relative variable costs of cVRP compared to its substitutes.

These wider implications raise questions about how to define the relevant costs for cVRP. One possible approach could consider the 'increment' at a firm level, looking only at how much cVRP increases overall costs (either through higher fixed costs or variable costs) when determining cost recovery. For example, if a call centre reduces the number of queries for existing payment methods in favour of handling some cVRP-related queries, but the overall costs of the call centre do not change, these costs wouldn't be counted as part of the increment.

This approach to defining incremental costs has several issues. There are practical issues: it is unclear how cVRP will affect the cost base of ASPSPs relative to existing payment alternatives. There are also issues around incentives and fair return. Only accounting for an increase in total costs would likely result in a price for cVRP that is below the actual cost of providing the service. This would conflict with the FCA and PSR's principles, as it does not guarantee long-run costs recovery and would very likely reduce ASPSPs' incentives to adopt cVRP.[23]

[23] The exception may be for Direct Debit payments where ASPSPs typically do not earn a return. If cVRP lowered the overall cost of providing such payments then ASPSPs may still have some incentive to adopt it even if (as implied by a total cost approach) revenues were zero.

For these reasons we recommend a focus on measuring the standalone provision of cVRP and the **direct incremental costs** associated with cVRP, excluding wider consideration of the impact on total costs for ASPSPs (such as any savings in costs for other services).[24]

Determining the efficient level of costs

In regulatory contexts, it is typical to consider the costs that would be incurred by an efficient provider. This is important to ensure that the price that is set reflects the level that a competitive market will tend towards and is captured in the PSR and FCA's first Principle. This can be a complex exercise in regulated industries where services are provided under monopolistic conditions, such as water supply or energy distribution. In these industries, efficiency is difficult to observe.

In the case of cVRP, the ASPSPs involved are operating in competitive markets. ASPSPs are providing payment services either on a standalone basis or as part of a wider bundle of services (such as part of a personal current account). There is competitive pressure in these wider retail banking markets and we would expect that ASPSPs are in general strongly incentivised to provide their payment services in a cost efficient way. In doing so they are able to become more competitive (through lower prices as part of their bundled product) and/or earn higher returns. As a result, there is less need to analyse or model the costs of a hypothetical "efficient provider", as actual costs incurred to provide payments are likely to be a close approximation. The challenge then becomes an accounting one. That is, ensuring that costs are accurately identified and allocated.

The cost information we have sought from ASPSPs is based on their best views of costs. Estimates are based on likely costs of cVRP given the experience from developing Open Banking or evidence from other payment methods such as Direct Debits. As explained, there are strong incentives for ASPSPs to deliver those services efficiently as cost-savings can result in higher profitability. We therefore expect in theory that the cost information provided should align with the FCA and PSR's first principle.

However, there are clear limitations in the exercise that we have been able to carry out. As costs have not yet been incurred, we are reliant on ASPSPs' estimates of future development costs and the appropriate proxies for cVRPs operating costs. In the scope of our work, we have also not been able to audit those costs, and there may be differences in interpretation and allocation in the methodologies applied by the ASPSPs. There is also a risk that ASPSPs provide higher cost estimates in the knowledge that these would then be re-couped through the price set. Recognising those limitations, we have sought data from a range of ASPSPs and as discussed in Chapter 10 taken a conservative position on what costs we assume for cVRP.

[24] Direct costs are those that can be directly attributed to a particular product or service. For more context of types of costs, see an explanation in European Regulators Group for Postal Services (2012). *Report on common cost allocation*, p.12-14.

A final issue relates to the longer-term operation of cVRP. How prices are set will have important consequences for the incentives of ASPSPs, including their longer-term efficiency. The issue of ensuring cVRP provides incentives for cost efficiency and ensuring continued alignment to Principle 1 is discussed in the detailed design choices covered in Chapter 9.

Attribution of shared cVRP costs[25]

The rollout of cVRP has been broken out into Waves. To some extent we expect these Waves to correspond to different investments that need to be made and ongoing costs that will be incurred. For example, higher risk use cases may have additional investment costs to build out more sophisticated dispute resolution processes.

However, it is also the case that there are upfront investment costs that are incurred in Wave 1 which will also be used for the delivery of later Waves. Rather than Wave 1 use cases solely bearing these costs, it would be fairest for all use cases to contribute to their recovery. This would require that (at least a portion of) these costs are deferred until later Waves. The long-run recovery of these costs would ensure this approach remains in line with Principle 1, while deferring these costs until additional use cases have been adopted and cVRP has reached a degree of maturity would help promote adoption, in line with Principle 3.

This will require the Operator at a future date to assess the volumes of cVRP payments and to adjust pricing across use cases to allow for the recovery of these shared costs. The need for this is considered further in Chapter 10.

Contributions to shared costs

The minimum price that a firm should receive to recover costs is the incremental cost of providing the service. However, a firm will incur other costs to operate that are shared across a range of different services. These are “fixed joint and common” costs (shared costs).

This is a feature of retail banking where ASPSPs usually incur a variety of costs including technology platforms, fixed infrastructure for call centres and branches and more. The specific costs can vary depending on the business model of the ASPSP, but they tend to be significant.[26] Importantly, these costs are not linked solely to one product but usually support the range of products and services provided by the ASPSP. As such, pricing for each product or service will often account for a contribution that needs to be made to cover these shared costs as well as the direct costs of providing the specific product or service.

This is a common practice in competitive markets and is also often factored into regulatory price setting.[27] In principle, the same can be factored into the pricing for cVRP. In other words,

[25] Shared costs include fixed joint and common costs.

[26] The FCA’s Strategic Review of Retail Banking Business Models (2018) provides estimates of the scale of many of the costs faced by retail banks including IT, branch, cash handling, customer services etc.

[27] For example, the Long-run Incremental Cost Plus (LRIC+) approach is often used in telecoms price setting. LRIC+ aims to allow firms to recover their incremental costs and provides for a contribution to the wider shared cost base.

the pricing can reflect the costs incurred for cVRP and a fair contribution to the wider shared cost base of ASPSPs.

The benefit of taking such an approach is that it can facilitate competition between ASPSPs with different business models. Very broadly speaking, retail banking models vary from those ASPSPs providing a full range of financial services products, to those providing only a subset, to those that primarily focus on payments. In this case, the narrowest business model would be one that solely provides cVRP (which would be a "standalone provider"). Encouraging such diversity is in line with the National Payments Vision which notes that "*Competition is key to enabling a diverse ecosystem, providing individuals and businesses with choice in how to make and receive payments, and spurring innovation across the landscape*."[28]

All models can benefit from having a share of their common costs recovered through cVRP. However, the benefits are greatest for "narrower" models and this becomes obvious when considering the case of a standalone provider. If shared costs cannot be recovered, then a standalone provider will not able to compete effectively. As cVRP is the only means of recovering costs, shared costs such as marketing or the cost of a call centre building will require a price that the standalone provider needs to charge above the level of incremental costs.

While there is precedent and benefit to allowing for the recovery of shared costs, it is not always necessary. There are also challenges:

- Factoring in shared and common costs will necessarily increase the price for cVRP. This will create a greater tension with the FCA and PSR's Principle 3 to promote the initial adoption of cVRP.
- It is not straightforward to consider what a fair share of the contribution should be for cVRP. Simple rules of thumb could be used, such as apportioning shared costs by proportion of direct costs (i.e., comparing the direct costs of cVRP with all other direct costs in the business), or payment turnover or volumes (when shared with other payment methods). Such approaches would not necessarily mimic the outcomes of a competitive market where we would expect that the contribution to shared costs depends on complex dynamics such as price elasticity of demand in each market.[29]
- The variety of ASPSP business models means that the calculation of shared costs and apportionment could vary widely. That would either require individualised pricing for each ASPSP or more practically, a judgement taken about what a "typical" ASPSP shared cost base looks like.

These challenges are not insurmountable. However, at this stage it would be pragmatic to set aside the recovery of shared costs. This supports the FCA and PSR's Principle 3 to incentivise adoption. It is also a more proportionate approach as defining shared costs and determining

28 National Payments Vision, November 2024, Page 16

29 Higher contributions / margins would be expected in product markets that have lower price elasticity of demand (i.e., customers are less price sensitive).

the appropriate contribution can be a complex task which will have little material consequence at this stage given the relatively low volumes and value that is likely to flow through cVRP Wave 1 use cases.

We recommend that the Operator re-evaluate the case for a contribution to shared costs as cVRP matures and its materiality to ASPSPs' business models grows.

7.2 Allowed remuneration

The second step in a cost-based approach concerns defining a "reasonable" level of allowed remuneration. At a high level, revenues should at least cover incremental costs and provide a sufficient return to incentivise investment in a competitive market. The appropriate return for a firm is closely connected to risk. The higher the risk the higher the return that is required by investors to adequately compensate them. In the long-run, firms that do not provide a sufficient return to match their risk are unsustainable as investors will prefer to allocate capital to firms that do.

Returns can however also be influenced by the stage of growth of a business. We often see that early-stage firms or firms that are in a high growth phase will have low (or even negative) returns as they invest to expand. This is on the expectation that returns will be higher in future to compensate investors for the costs, losses and risk of growth.

Alongside these general considerations there are a few specific issues in the context of cVRP:

- cVRP is a nascent market and promoting adoption will be key to long-term success. The application of margins for a mature service may not be appropriate if they materially raise the price and dampen adoption from Billers or Payers. In the early growth phases of a new market or venture it is common to see low or even negative margins amongst providers and the same could be applicable here.
- ASPSPs are providing substitute payments to cVRP including Direct Debit and card payments. The incentive for ASPSPs to invest and promote cVRP may turn not just on the total margin earned on cVRP but how this compares to margins on alternatives. If cVRP margins are lower than alternatives there may be a weaker incentive for ASPSPs to invest.

These two points are potentially in tension and speak to different parts of what is required to support the adoption of cVRP (ASPSPs investing and Payers/Billers adopting it alongside PISP investments). These considerations are further assessed in Chapter 10 where we consider the impact of applying a margin on the price and competitiveness of cVRP. We also consider what the incentives for ASPSPs may be relative to alternatives to cVRP.

In what follows we set out how returns can in principle be assessed for cVRP. We consider the two main approaches to establishing the allowed remuneration, a "WACC approach" and a "Margin approach" which we consider in turn. We then evaluate which approach is most suitable for cVRP and consider how such an approach could be implemented.

7.2.1 Approaches to return

Briefly, the two main approaches to determining returns are:

- **WACC approach:** A common regulatory approach[30] used particularly in utility regulation divides allowed remuneration into three components. Two of these components ensure cost recovery: the return *of* investment ensures the initial investment is recovered as the asset depreciates, while an allowance for operating expenditure ensures ongoing costs are also covered. The weighted-average cost of capital (WACC) then determines the return *on* the investment needed to compensate for risks taken when financing a large upfront investment, as well as the opportunity cost of other uses of capital.[31]
- **Margin Approach:** A margin approach involves adding an allowed profit margin directly to a firm's operational costs, which if set sufficiently can incentivise investment.[32]

7.2.2 Evaluation of return approaches

In both cases, the value of the WACC or margin can be varied to reflect the level of risk of the business and the resulting compensation needed for investors – the higher the risk, the higher the return, either through a higher WACC or higher margin.

The key difference between where the two approaches should be applied lies in the cost structure:

- **WACC is best suited for capital intensive industries**, such as utilities and infrastructure, which typically operate as regulated monopolies with large upfront investments. These investments are financed through a mix of debt and equity, making WACC an appropriate approach, as it aligns allowed returns with actual financing costs.
- **A margin based approach is best suited for asset-light industries**, such as regulated retail sectors.[33] These industries require relatively little debt or equity financing, as their costs are primarily operational and typically covered through the company's own cash flow.

Banking is a capital intensive industry that requires substantial equity from shareholders, hence it is typical to see a focus on return on equity as a key metric. However, cVRP is an incremental service for most ASPSPs and the additional equity (investment) required is likely

30 Often referred to as the "Regulated Asset Base" (RAB) model.

31 WACC is calculated as the average cost of capital across both debt and equity, weighted by their respective proportions in a firm's capital structure. Regulators can typically observe the actual cost of debt, but need to estimate the cost of equity using market data to test the volatility of the firm relative to the wider market. See the UKRN 2023 guidance for more, available here: https://ukrn.org.uk/publications/ukrn-guidance-on-the-methodology-for-setting-the-cost-of-capital/.

32 The margin is applied to operating costs, while upfront investment costs are typically considered separately.

33 For example, Ofwat used a margin-based approach to determine returns in the UK water retail sector. This approach was preferred due to the asset-light nature of the business, which made traditional return-on-capital methods (such as WACC) less suitable. See here for their full report: rpt_com20140214pwcnetmargins.pdf

to be relatively small. Instead, the cost structure of cVRP is primarily operational, making a margin-based approach more suitable.

7.2.3 Determining margins for cVRP

Comparator analysis

Regulators often use a "comparator analysis" to determine an appropriate margin. This involves comparing the risk profiles of similar firms or products within the same or comparable sectors to define a set of suitable comparator firms or products with similar risks. By examining these benchmarks, regulators can set a margin that is consistent with what is achievable in competitive markets, while ensuring firms are provided with a sufficient return to compensate them for their risks.

The principles of comparator analysis are straightforward, but the process can be complex, involving a detailed assessment of suitable comparators, margin calculations over time, and an evaluation of the risk profile for each comparator. A highly detailed approach may be suitable for regulatory decisions in large, established sectors with known market dynamics.

However, for this work, a simplified comparator approach is both sufficient and more practical given: (i) the inherent uncertainty in cVRP's development; (ii) the desire to move rapidly to implement a price; and (iii) a limited scope to Wave 1 use cases which will likely only account for a small portion of volume. A more precise analysis will be important once costs are incurred and risk materialises, and as volumes grow with maturity and the implementation of future Waves.

Criteria for selecting comparators

To gather data on plausible margins for cVRP we need to identify relevant comparators. Ideal comparators are those that face similar types and magnitudes of risk that will be experienced by ASPSPs when providing cVRP. Given that, there are several specific criteria we can use to assess comparability including market dynamics, the stage in the business cycle, the regulatory environment and the asset and cost composition. These criteria were selected based on the primary risks associated with cVRP and are therefore the highest-priority factors for evaluating comparators.

Table 6 sets out these criteria and maps their application to cVRP. In addition to these criteria, it must also be feasible to gather the relevant data on a comparator to calculate their margins.

Table 6 Criteria for comparators and application to cVRP

Criteria	Detail	Application to cVRP
Market dynamics	■ Scale of the business (local, national, international). ■ Similar exposure to economic shocks and risks. ■ Competitive market.	■ cVRP will operate at a national level. ■ Demand will be influenced by the wider UK payments market and macroeconomic environment. ■ Key risks are around usage / adoption and unexpected costs (e.g. higher levels of disputes). ■ ASPSPs expected for Wave 1 to hold limited liabilities and minimal direct risk.[34]
Stage in the business cycle	■ Firms will face different risks depending on their growth phase. ■ Higher adoption risks for firms or services that are new.	■ cVRP is a nascent service so a good comparator for the early phase of adoption will be businesses that are growing. ■ Firms that have successfully grown or are mature will better reflect long-term cVRP margins.
Regulatory environment	■ Regulation can create additional requirements and risks for firms to manage.	■ cVRP operates in a strong regulatory environment focusing on consumer protections and data security. Good comparators will face a similar regulatory environment.
Asset and cost composition	■ Asset and cost composition will affect comparability. ■ High asset businesses may earn a high operating margin so that they cover their cost of capital.	■ cVRP is asset-light and has a high proportion of operational costs. ■ Good comparators will be businesses that rely primarily on technology, people, and ongoing operational expenses rather than physical infrastructure or heavy capital investments

Source: Frontier Economics

[34] Chapter 9 sets out the services ASPSPs will be expected to provide. Wave 1 is by definition low risk, but ASPSPs are also not expected to take on material liabilities. This may change with later Waves which have higher risk.

Potential comparators for cVRP

The obvious place to start in considering comparators to cVRP are firms operating in UK payments. There are in practice a range of different firms and comparators that could be considered including:[35]

- **Direct Debit Bureaus**: submits Direct Debits on behalf of a biller. Examples include AccessPay, GoCardless and FastPay.
- **Payment Acquirers**: there are a number of major firms that provide card acquiring services in the UK and internationally. Acquirers accept payments from billers and process transactions through card schemes. They bear risks associated with processing the transactions. Acquirers include WorldPay, BarclayCard, CardNet, Elavon and Global Payments.
- **Payment Platform Providers**: provide end-to-end processing for billers, particularly in e-commerce. Increasingly many such providers are also full acquirers. Examples include Square, Stripe, Aday and others.
- **Open Banking Providers**: firms that are providing Open Banking services including payments. Examples include TrueLayer, Tink and Yapily.
- **Receiving ASPSPs**: receiving ASPSPs accept payments on behalf of billers, including through FPS and Direct Debits, for which they can charge. Firms will include commercial banks and other banks or ASPSPs that serve smaller businesses.

These definitions are not mutually exclusive as some firms will operate multiple functions and services across payment options.

There are other comparators that could be considered beyond payments, including banks (their wider business model) and firms in other sectors such as energy retail. However, these comparators are less suitable for cVRP. Overall risks and margins for banks are heavily influenced by their lending activities, and banks are generally capital-intensive, making their broader business model a poor comparator for cVRP. The energy retail sector operates in a very different market to payments and has a distinct risk profile, also making it a poor comparator for cVRP.

International examples could also be considered, for example the margins earned in other payment systems such as iDEAL in Sweden. The difficulty with such comparisons is however that the equivalent commercial model (and any return) for providers is usually bundled within their wider services and therefore cannot be directly estimated in a way that would be useful for calibrating an appropriate margin for Wave 1 cVRP.

Table 7 sets out an evaluation of different potential comparators. None exactly match with the risks and market conditions that are likely for cVRP. For example, most firms operating in payments will bear risks and costs that are likely to be greater than those for Wave 1 cVRP.

[35] Partly drawn from a taxonomy set out for card acquiring by UK Finance: https://www.ukfinance.org.uk/system/files/UK-Card-Acquiring-Taxonomy-v1.pdf

Scale is also highly varied, with many potential comparators operating internationally. Others are at the early stages of growth and their returns will be low or even negative. The closest comparators are likely to be the margins earned by receiving ASPSPs on FPS transactions (but data is not public) or the margins earned by bureaus who facilitate Direct Debit transactions.

Table 7 Initial comparator assessement: comparability to cVRP

Comparators	Market Dynamics	Business cycle	Regulation	Assets & Costs	Data Feasibility	Conclusion
Considered						
Payment Acquirers WorldPay, Barclaycard, Cardnet & Others	Higher risk and liabilities v Wave 1	Later stage of the cycle				Possible upper bound
Payment Platform providers Stripe, GoCardless, Square etc.	Higher risk and liabilities v Wave 1	Early stage of the cycle				Indicator of early stage margins
Open Banking Infrastructure Providers TrueLayer, Tink, Yaply, Token.io		Early stage of the cycle				Indicator of early stage margins
Direct Debit Bureaus AccessPay, FastPay	Does not handle customer disputes					May be closest in alignment
Receiving ASPSPs Receiving ASPSP charges to merchants for Direct Debit & Faster Payments					*Not available*	Close comparator but lack of data
UK Banks				*Lending side presents higher risk*		Margins will mainly reflect risks not relevant to cVRP
Disregarded						
UK Energy Retail						*Not considered further*
Core banking infrastructure providers						

Source: Frontier analysis

7.2.4 Potential margins for ASPSPs

Given the above assessment we have gathered financial data for the comparators identified in Table 8, covering Direct Debit bureaus, payment acquirers, payment platform providers, and Open Banking infrastructure providers. We have collected margin data for 2022-2024, with all data collected from financial statements in annual reports.[36] We have used the "EBIT Margin" - a widely used approach in comparator analysis.[37]

Reported margins ranged from c.1% for Open Banking providers (which are likely in a growth phase) to c.13% for a relevant acquirer. In practice, there is a relatively small set of potential comparators once accounting for issues such as data availability or stage of development.

Table 8 Comparator margin assessement

Comparator Group	Margin range	Comment
Direct debit bureaus *Closest in alignment*	*Not available*	Particularly limited financial data and, of those with data, many offered a broader range of services or were in early development stages, making them less suitable for direct comparison.
Acquirers *Possible upper bound*	8-13%	We discounted most acquirers given their wider business model (and higher margins). These lower margins relate to an acquirer that focuses on providing payment processing and does not have e.g. credit card issuance revenues.
Payment platform providers *Indicator of early stage margins*	0.4-3%	Generally limited data availability. Margin range of 0.4% and 3%.
Open banking infrastructure providers *Indicator of early stage margins*	<0 – 1%	Most are in a growth phase or currently loss making.

Source: Annual Reports and financial accounts of each firm.

[36] Collecting multiple years of data helps smooth out variability in financial performance. Using the last three years provides a reasonable and recent estimate of margins for each comparator while minimising distortions from the COVID-19 pandemic.

[37] The EBIT margin is equivalent to the return on sales ("RoS"), calculated as operating profit divided by revenue: $EBIT\ Margin = \frac{Operating\ Profit}{Revenue} = \frac{Revenue - Total\ Costs}{Revenue}$. This measure is commonly used in comparator analyses, see page 8 here: rpt_com20140214pwcnetmargins.pdf.

In Chapter 10 we take a 10% margin as our central scenario to incorporate into ASPSPs' pricing. This approximately reflects the margin of an acquirer where earnings are not as reliant on non-comparable services such as card issuance. Other margins could be applicable – including lower margins or no margin to reflect the early stages of cVRP. In Chapter 10 we consider options to delay the recovery of costs which in effect leads to negative margins in the early phase of cVRP. In Chapter 10 we also test further how the 10% margin may compare to the returns that ASPSPs earn on alternative payments, which is an important consideration for the incentives of ASPSPs to adopt cVRP.

8 Overview of pricing for alternative payment options

The UK has a well-established payments market with billers able to access a variety of different payment methods. As outlined in Chapter 6, for cVRP to achieve significant volume growth, it must effectively compete with these alternatives. And as evidenced in our stakeholder interviews, pricing will be an important factor to doing so.

To support an assessment of the price for Wave 1 cVRP, this chapter sets out a view of pricing for the main potential substitutes: Direct Debit and card transactions.[38] There are however several practical challenges to forming a view of the prices of existing payment options. Issues include:

- payment value chains can be complex, with many different parties involved (or not);
- pricing can be highly varied often based on the size of the biller; and
- public information on prices in each part of the value chain (or in total) is generally limited.

Given these challenges we have not attempted to precisely determine the prices that Billers face for today's payment options. Instead, we have compiled a best view of the range of prices which will need to be considered when assessing the impact of any proposed price for Wave 1 cVRP. This view has been developed by drawing on public information and estimates shared by stakeholders.

In Chapter 10 we draw on this analysis to consider what price Billers may pay for Direct Debit and card transactions could be compared to cVRP. For the latter we factor in the price that ASPSPs may charge under the commercial model as well as other parts of the value chain that will influence the final price (including the prices charged by PISPs and receiving ASPSPs).

8.1 Card payments

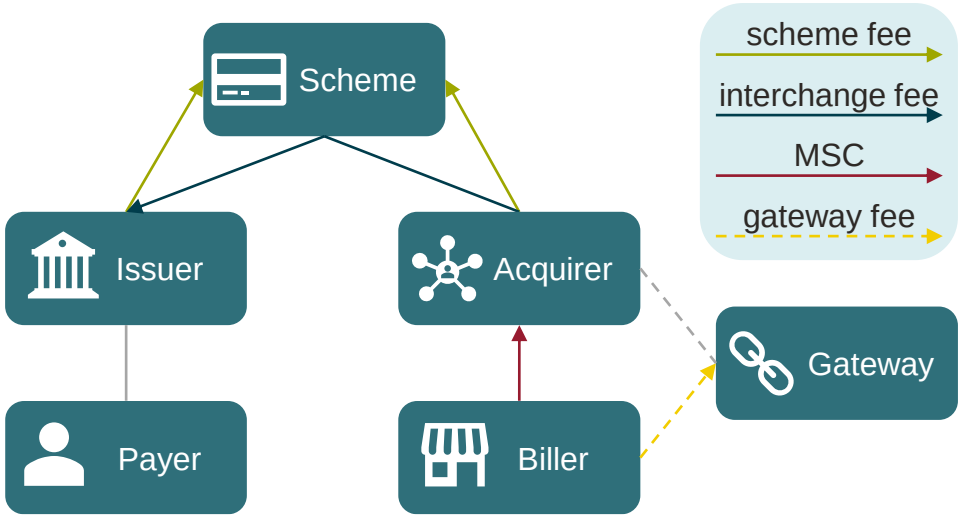
Card payments involve scheme operators (e.g. Visa and Mastercard) that charge a scheme fee to both the Issuer (the payer's bank / ASPSP) and the Acquirer. Additionally, the Acquirer pays an interchange fee to the Issuer. To recover these costs, the Acquirer charges billers a Merchant Service Charge (MSC), which includes a fee for its services.

In some cases, merchants may also rely on Payment Gateways, independent sales organisations, or other third parties that facilitate access to the payment scheme.

Figure 3 illustrates the value chain in card payments for a four party scheme such as Visa and Mastercard.

[38] This view is on the basis of the discussions we have held with stakeholders as to which payments cVRP may be a substitute for.

Figure 3 Value chain in card payments



Source: Frontier Economics.

The MSC paid by billers generally reflects:

- the interchange fee paid to the Issuer;
- the scheme and processing fees; and
- the fee for the Acquirer's services.

Fees can vary based on the features of the transaction, such as:

- domestic vs. cross-border transaction;
- credit vs. debit card payment;
- consumer vs. commercial transaction; and
- in-person vs. online payment.

Acquirers apply different pricing models for MSCs, including:

- **fixed pricing**: a set monthly fee covering all transactions;
- **standard pricing**: the fee varies based on volume and value of transactions;
- **interchange fee plus (IC+)**: the interchange fee is passed through, and the processing fee is added on top; and
- **interchange fee plus plus" (IC++)**: both the interchange and the scheme fees are passed through, with the processing fee on top.

Acquirers offer standard pricing to most billers, and IC+ and IC++ primarily to large billers. Billers may also pay additional fees if they require services from Payment Gateways, independent sales organisations, or other third parties. Additionally, acquirers and third parties may impose monthly subscription charges on top of per-transaction fees.

Table 9 provides an overview of the estimated charges that billers face for Visa and Mastercard card payments by biller size. This evidence draws primarily from the PSR's market review into card acquiring. The evidence it presents is now relatively old (2018) but still provides the best public basis for the approximate costs faced by different billers for accepting card payments. It shows that the MSC can vary from ~0.4% of payment value for the largest merchants to ~1.8% for the smallest. In addition to these fees some merchants will pay other fees such as to payment gateways. These fees can be on the order of ~1% of payment value.

In total, the fees for card payments can vary from around 0.4% for very large merchants to nearer 3% for the smallest merchants.[39] While the fees are expressed as a % of value, in practice the per-transaction MSC usually has both a % component and a £ component, meaning that the total MSC varies both by value and by volume of transactions. On top of the fees included in the table, the Acquirer and Gateway (or other third parties) may impose monthly subscription charges.

Table 9 Merchant Service Charge (MSC) on card payments by merchant size

Merchant size	Description	Typical Fee
MSC by the Acquirer		
Small merchants (annual turnover up to £380,000)	Small merchants are roughly 94% of all merchants but account for only 8% of total transaction volume and less than 7% of transaction value.	1.8%
Medium-sized merchants (annual turnover up to £10m)	Medium-sized merchants represent 6% of all merchants. Their transactions amount to roughly 9% of total volume and 11% of value.	1%
Large merchants (annual turnover up to £50m)	Large merchants are 0.2% of all merchants, and account for roughly 5% of all transaction volume and 6% of transaction value.	0.7%
Very large merchants (annual turnover above £50m)	While very large merchants are only 0.1% of all merchants, they account for over 78% of all transaction volume and 76% of all transaction value.	0.25%-0.4%
Additional fees by Gateways, etc.		

[39] While the total fee paid by very large merchants may only amount to 0.4%, smaller merchants not only pay a higher MSC (ca. 2%) but often rely on Payment Gateways which impose additional fees (ca. 1%), thus paying a total charge of roughly 3%.

Merchant size	Description	Typical Fee
All merchants	Fees applied by Payment Gateways, independent sales organisations, or other third parties	Up to ~1%

Source: *PSR, Market review into card-acquiring services, Final Report, November 2021; information shared by PISPs.*
Note: *The information in the table refers to the year 2018.*

8.2 Direct Debit

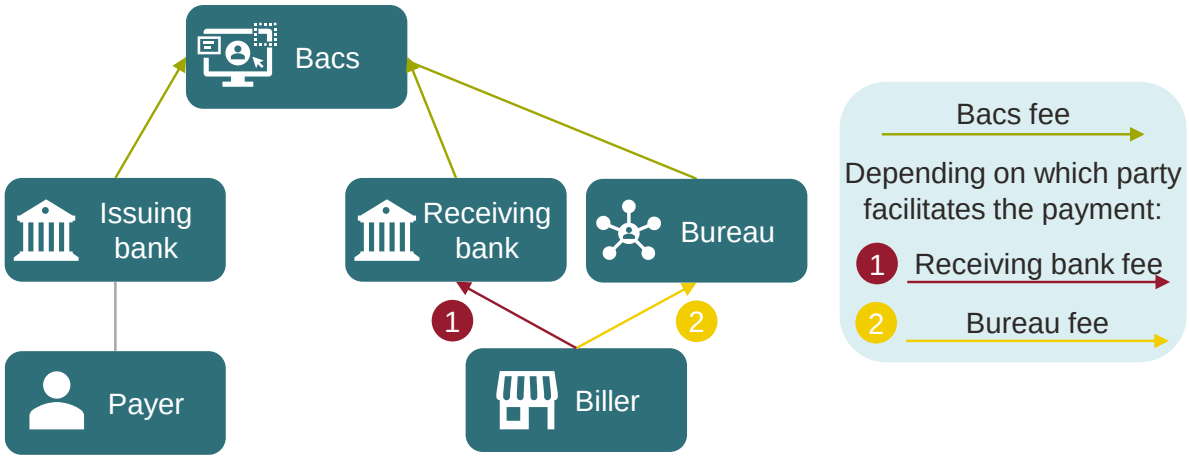
Direct Debit enables billers to collect funds directly from a customer's bank account once the customer provides authorisation (via a mandate). The process is managed through the Bacs system – a secure, established network for bank-to-bank transfers. In this system, the payment is usually facilitated by either the receiving bank or a bureau:

- the **receiving bank** (also known as the 'sponsoring' bank) processes Direct Debits for merchants that hold their own Service User Number (SUN) and meet the necessary criteria;
- a **bureau** submits Direct Debit instructions to Bacs on behalf of billers that do not have a SUN, offering processing services but not directly engaging with customers; alternatively,
- very large billers (e.g. government agencies) have direct access to Bacs.

Both the issuing bank (the payer's bank) and the receiving entity (whether a receiving bank or a bureau) pay a charge to Bacs for processing Direct Debits. While the issuing bank does not directly charge the payer for providing Direct Debit services, the receiving bank or the bureau impose fees on billers for processing payments. These fees may include per-transaction charges, monthly service fees, or other administrative costs.

Figure 4 outlines the value chain for Direct Debit payments.

Figure 4 Value chain in Direct Debit



Source: *Frontier Economics.*
Note: *The payment can be facilitated either directly by the Receiving bank or by a Bureau.*

The actual fee structure depends on the biller's transaction volume and the pricing model of the bureau or the receiving bank. Direct Debit fees can have both a per-file and a per-transaction component[40]. The per-transaction component may have both a £ amount and a percentage amount based on the transaction value. On top of these charges, monthly subscription fees may apply.

Table 10 estimates the total charge paid by billers for Direct Debit payments.

Table 10 Total charge paid by Billers for Direct Debit payments

Merchant size	**Typical per-transaction fee**
Small	£0.20 +1%
Medium	£0.10
Large	£0.01
Very large	£0.005

Source: *GoCardless, London and Zurich, Adyen, supported by information shared by PISPs.*
Note: *In addition to per-transaction fees, monthly subscription fees (£25-£49) also apply.*

40 A 'file' refers to a batch of transactions that are submitted together by either large merchants or by the bureau. The per-file fee covers the cost of processing this entire batch, regardless of how many transactions it contains. Instead, per-transaction fees are applied to each individual Direct Debit processed every time it is collected from a customer.

9 Detailed design choices of the commercial model

The preceding chapters have considered the methodology for setting the *level* of price for cVRP. There are other design choices that need to be made for a commercial model to be fully specified. These include:

- The basis of charging for a commercial model, including who would be charged, what structure the charges would likely need to take (ad valorem or fixed) and whether charges should vary with volume or over time.
- How the commercial model would be set (at a high level), including the type of agreement (multilateral or bilateral) and whether prices are market-wide or specific to each participant.

We have evaluated the design choices against the principles for cVRP pricing and what is practically feasible to implement. Table 11 below presents our recommendations from this assessment.

In the next chapter we bring together these decisions along with the preferred methodology and data gathered from stakeholders to consider potential prices for cVRP.

Table 11 Design choices: evaluation summary

Issue	Options	Recommendation
Services provided by ASPSPs	■ **Processing transactions, managing disputes and issues**; *plus* ■ ASPSPs hold some liability or other participants hold liability	ASPSPs will likely need to provide a number of services that cannot be fulfilled by others. This includes the processing of transactions on behalf of their customers (Payers) and the handling of any queries or disputes raised by their customers. Design choices relate to services that could in principle be carried out by other participants. The most important such service is likely to be who holds liability for e.g. customer protections. Liabilities are expected to be limited for low-risk Wave 1 use cases and should be held by Billers and/or relevant regulations and schemes that provide recourse to Payers in the event of losses.[41] We factor this scope of services into our assessment of costs in Chapter 10. Liability becomes a critical choice in later Waves where they may be material and may not all be covered by Billers or industry schemes. Further consideration is required as part of work to develop commercial models for later Waves.
Who to charge	■ **PISP**	**Charging PISPs** is the preferred approach as it is most feasible to implement while also supporting adoption.

[41] For example, Payers will have some protections through the Financial Services Compensation Scheme for transactions that relate to financial services.

Issue	Options	Recommendation
	■ Payer ■ TSP ■ Receiving ASPSP ■ Biller	Although the costs are not directly imposed on the ultimate beneficiaries (payers or billers), they can be passed on through PISP service fees, meaning the beneficiary can still pay.
Type of agreement	■ **Multi-lateral** ■ Bi-lateral	**Multi-lateral agreements** that embed the commercial model simplify the process of building a network for cVRP by avoiding multiple bi-lateral negotiations. A multi-lateral agreement is therefore better placed at driving adoption. It should also be more likely to result in cost-reflective pricing, given a central assessment of prices which is not influenced by bargaining power in a bi-lateral negotiation. Subject to competition law compliance, the MLA could establish a default required price or have it as a 'fallback' in the absence of bi-lateral negotiation. In practice we expect such 'fallback' options to be the default price used in most cases as one side in such a negotiation would always lose out relative to the fallback.
Market or individual price	■ **Single market-wide price** ■ Individual price by ASPSP	A single **market price** is better able to ensure fairness, transparency and adoption than a more complex set of individual pricing for each ASPSP.
Pricing structure	■ **Fixed charge** ■ *Ad valorem* charge ■ Price tiering	A fixed pence per transaction charge is likely to be the most appropriate reflection of costs. Tiering could be considered in future, subject to competition law compliance, but is not practical to implement for Wave 1.
Pricing by use case	■ **One price for all Wave 1 use cases** ■ Price by use case	For simplicity, we recommend setting a single price for all Wave 1 use cases. Allowing for different prices would be more appropriate if the costs of the service more clearly vary by use case.
Options to discount pricing in the early phases of rollout	■ Exclude the contribution to shared costs ■ Delay recovery of upfront shared cVRP investment costs and share with later Waves ■ Delay recovery of upfront Wave 1 cVRP investment costs ■ Delay the ASPSP margin ■ Delay some or all recovery of incremental ongoing costs	Options are assessed further in Chapter 10.

Issue	Options	Recommendation
Length of transition time	■ Transitioning from the initial price (encouraging adoption) to the long-term price	In Chapter 10 we use an initial 5 year period as the basis of assessment. This aligns with regulatory price setting in many sectors and provides time for cVRP volumes to materially grow.
Frequency of re-pricing	■ How frequently to re-assess costs and re-price cVRP	The Operator will in time need to determine whether and how frequently it review pricing and we recommend it be guided by the considerations explored in this chapter.

Source: Frontier Economics
Note: The recommended options are bolded.

9.1 Services provided by ASPSPs

ASPSPs will be required to provide a number of services to enable the provision of cVRP to Payers and Billers. There are several services that ASPSPs alone are able to provide, the most important being:

- Facilitating the ability for Payers (ASPSPs customers) to use cVRP which will include building and operating any technical requirements to allow payment requests to be made and any other associated functionality for cVRP (e.g. charge backs).
- Handling customer queries that arise from the use of cVRP and managing any disputes or issues that customers raise.[42]

One critical service where there is a decision to be made relates to liabilities. To the extent that Payers have customer protections there will be associated liabilities. There are a range of circumstances in which liabilities might arise, such as refunding Payers where a Biller becomes insolvent and Payers would otherwise lose money, or where there has been a dispute over the provision of a good or service by a Biller.

Decisions are required as to who (if anyone) in the value chain bears those liabilities and the associated risks and costs. Wave 1 use cases were selected to be low-risk and therefore to have few if any such liabilities. Moreover, the use cases in Wave 1 largely relate to sectors where Payers have protections and have existing recourse to recover their funds in the event, for example, of insolvency of a Biller. That means that there should be little or no liability that an ASPSP (or any other participant in the value chain) should bear.

[42] In theory it is possible to imagine that other participants could at least partly fulfil this function. For example, Payers could be directed to PISPs or Billers when they have an issue or to raise an issue or a dispute. As with many other payment options it is likely to be the case that Payers will in the first instance be directed to the Biller where they have an issue or dispute (as happens in other payment methods). However, it may be the case that Payers are not satisfied with the outcomes of such processes and raise issues with their ASPSP. There may also be some issues that are relevant for ASPSPs (such as failure to fulfil a payment that is due to a fault of the ASPSP). It is therefore likely to be the case that ASPSPs will always need to provide some degree of service relating to handling issues and disputes of their customers.

The situation may be different for later Waves where use cases such as e-commerce will entail much greater risk that Payers will lose money through, for example, Biller insolvency or disputes over the provision of goods and services. To the extent that it is determined that customers will have protections against such losses there may be material liabilities that need to be met by a participant in the value chain. These liabilities could be held by one or more parties including ASPSPs and PISPs.

There will be several considerations as to who is best placed to bear any liabilities that include **capacity** (the participant has the resources to bear losses, which may be volatile and could be sizable); **efficiency** (economic theory points towards risks / liabilities being held by those who can best manage them so as to provide incentives to take appropriate action to reduce such risks); and **practicality** (issues relating to how liabilities can be validated and funds returned to Payers who are owed).

As we do not expect ASPSPs or other participants in the value chain to bear such liabilities for Wave 1, we have not considered a full assessment of who would be best placed to do so against these and other criteria.

Our analysis of costs in Chapter 10 is therefore based on the expectation that ASPSPs will not bear liability for Wave 1 payments but will face costs for services including processing transactions and handling Payer queries and disputes. Further consideration will be necessary as part of the work to develop a commercial model beyond Wave 1 as to whether ASPSPs hold any liability and associated risk and cost.

9.2 Who to charge under the commercial model

The commercial model aims to establish the appropriate price that ASPSPs should set for accessing cVRP while providing appropriate compensation for this service. In principle, any participant in the ecosystem could be charged by the ASPSP. However, the decision on who bears the cost must balance key trade-offs against the pricing principles for cVRP.

Two key PSR and FCA principles are particularly relevant in this decision:

- **Principle 2: The price proposed should incentivise investment and innovation in cVRP.** The price should ensure that, in the long-run, ASPSPs are compensated for the risks carried, and both ASPSPs and PISPs are incentivised to invest and innovate to the extent that this benefits end users.
- **Principle 3: The price proposed should incentivise cVRP adoption by consumers and businesses to help enable network effects.** The level and structure of prices should promote widespread adoption of cVRP, which will in turn maximise its benefits.

These principles and the need to support adoption imply three relevant criteria for considering who should pay:

- **Feasibility and efficiency**: pricing should be feasible and efficient to implement. This ensures that pricing does not create unnecessary friction, complexity, or barriers to adoption.
- **Aligned to competitive dynamics**: there are existing pricing structures in place for the substitutes to cVRP. Pricing levied on some parties not charged today could have a stronger impact on the potential for cVRP to be adopted.
- **Beneficiary pays**: the beneficiaries of cVRP services should bear the costs of the service.[43] This provides the basis of aligning incentives between supply and demand: services are provided where the value that beneficiaries receive exceed the cost to suppliers. If costs are borne by those who are not beneficiaries this may disincentivise adoption.

Given the above, we have evaluated the decision of who to charge against these implied criteria. Table 12 summarises the implications of charging each participant.

Table 12 Who to charge under the commercial model

Party	How could it work?	Feasibility & efficiency	Competitive dynamics	Beneficiary pays
PISP	The ASPSP and the PISP would both be parties to the MLA which would guarantee efficient implementation. The level and structure of the price set out in the MLA would be such as to incentivise investment and innovation, and thus promote adoption. While neither payer nor the biller would be directly charged, the PISP has the potential to pass these costs on to billers through its service fee. This means that a beneficiary can ultimately pay.			
Payer	Charging the payer would ensure one of the beneficiaries bears the cost, and it would be feasible to implement. However, charging payers would significantly hinder adoption as competing payment methods (e.g., card on file, Direct Debit) do not impose direct fees on payers.			
Biller	While the biller benefits from cVRP, requiring the sending ASPSP to form direct commercial arrangements with each biller would be impractical. Even if feasible, the complexity and cost of such exercise would inevitably discourage adoption.			
Receiving ASPSP	Receiving ASPSPs are not directly party to the MLA and would need to be brought into scope			

[43] This is what happens in a normal market exchange: the beneficiary of a good or service pays those who bear the costs of supplying the good or service.

Party	How could it work?	Feasibility & efficiency	Competitive dynamics	Beneficiary pays
	(e.g. commercial banks). Adding a third party to these commercial arrangements would create significant complexity and may hinder development of a network and adoption.			
TSPs[1]	Not all transactions would require a TSP, meaning that the model would be incomplete and unfeasible. Furthermore, while TSPs could be a party to the MLA, it would be illogical for the ASPSP to charge them for services they cannot directly access.			

Source: Frontier Economics' assessment against FCA and PSR's principles.

Note: (1) Some PISPs may collaborate with 'Technical Service Providers' (TSPs), both of which are considered third-party providers (TPPs). While TSPs do not directly engage in accessing or initiating transactions, they can supply the technical infrastructure and services that allow PISPs to operate.

As set out in Chapter 4, cVRP will operate as a two-sided market with Billers and Payers being connected by a value chain that includes ASPSPS and PISPs. Both Billers and Payers are beneficiaries and derive value from the use of cVRP. Two-sided markets are common and how each side is charged can be highly varied. Considerations often include factors such as price elasticities of demand in each side of the market.

In this case the key consideration as noted in the Table above is the set of wider competitive dynamics. In principle, ASPSPs could charge their customers (Payers) for using cVRP (which could be in combination with charges that ultimately fall on Billers). In practice, Payers are likely to be very sensitive to such pricing as they do not typically pay such charges when using Direct Debit or cards. Any direct charge on Payers is therefore likely to result in materially less adoption of cVRP than would otherwise be the case.

For practical reasons, ASPSPs are unlikely to be able to charge Billers directly but it is feasible to charge PISPs who have the potential to pass those charges on to Billers. For these practical reasons and to support the adoption of cVRP it is likely to be most appropriate that the commercial model is set between ASPSPs and PISPs.

9.3 Type of agreement

The agreement of a commercial model between PISPs and ASPSPs can happen in different ways. Generally, in competitive markets such agreements will happen on a bi-lateral basis and services are only provided when those agreements are in place. In the case of cVRP the expectation is that ASPSPs and PISPs will sign up to a multi-lateral agreement (MLA) which will set out the relevant terms including operational frameworks, liability, compliance obligations and so forth. The commercial arrangements can also be incorporated as part of the MLA.

We have formalised the assessment of the two options against the PSR and FCA's principles, as summarised in Table 13.

Table 13 Type of agreement: evaluation summary

Principle	Option 1: Multi-lateral	Option 2: Bi-lateral	Evaluation
1. Reflect long-run costs			ASPSPs would, in principle, require a price that enables them to provide the service sustainably in the long-run. However, the outcome of negotiations may not necessarily reflect long-run costs, and may instead capture bargaining power. Multilateral agreements could help reduce transaction costs and improve scalability, ultimately lowering overall costs.
2. Incentives for investment and innovation			Both frameworks can promote investment. A multi-lateral agreement can promote investment through the simplification of pricing and by reducing uncertainty. Bi-lateral agreements can also promote investment as participants can tailor terms of the agreement, or gain better terms for improved offerings.
3. Incentives for adoption			Multi-lateral agreements can simplify onboarding and reduce friction, facilitating broader adoption among ASPSPs and PISPs who face lower costs and fewer barriers to developing the network. Lower costs may in turn be passed on to Billers and facilitate their adoption of cVRP.
4. Pricing should treat sending firms and PISPs fairly			Multi-lateral agreements ensure uniform pricing structures that can prevent discriminatory practices. Bi-lateral agreements may favour larger ASPSPs and/or PISPs with greater bargaining power.
5. Pricing should be transparent and simple			Multi-lateral frameworks inherently promote pricing transparency and simplicity compared to bilateral agreements. Bi-lateral agreements are transparent for each party in the negotiation but there is inherent uncertainty about how these terms compare to other negotiated agreements.
6. The methodology should be clear and transparent			Pricing under an MLA can also provide more transparency around the factors considered for pricing.

Source: Frontier Economics assessment against the FCA and PSR's principles

Subject to ensuring competition law compliance (the mechanism for which is outside of the scope of this paper), multi-lateral agreements can simplify the development of a cVRP network by reducing costs, complexity, and barriers to entry. There is precedent in markets such as the EU to adopt a multi-lateral approach to facilitate smoother market integration and reduce fragmentation.[44] Key advantages include:

- **Scalability and efficiency:** by lowering the effort required to reach agreements, this approach can exclude the need for multiple negotiations. This is particularly beneficial

[44] See the discussion on the 'inside the scheme' and 'outside the scheme' models in Euro Retail Payments Board (June, 2021). *Report of the Next Phase of the ERPB Working Group on a Single Euro Payments Area (SEPA) Application Programming Interface (API) Access Scheme*, p.26.

during the initial stages of rollout, as it can minimise friction and facilitate broader market participation.

- **Predictability:** multi-lateral approaches can establish clear and consisting pricing, which can reduce uncertainty and promote long-term investment among all participants.
- **Level playing field:** a multi-lateral approach with a consistent price across participants means that PISPs are competing with a level playing field. The prices that result from bi-lateral negotiation are likely to reflect respective bargaining power, disadvantaging small or new entrant PISPs.

There have however also been attempts to allow for bi-lateral negotiation as a complement to multi-lateral price setting. Such a hybrid model is followed by the EU's SPAA framework, which allows for negotiation outside the standard multi-lateral pricing menu. Under this approach parties can use the default prices (or the 'fallback' price), or if jointly agreed can set a different price.

There are in fact three variants of pricing that could be implemented within the MLA:

1. The MLA sets a default price that all participants must adhere to.
2. The MLA sets a 'fallback' price that can be used if a bi-lateral agreement is not reached.
3. The MLA sets a 'suggested' price but parties do not have to adhere to it if they choose not to.

In the case of the third option we would expect this to lead to outcomes similar to bi-lateral negotiation. Participants with more bargaining power would be expected to negotiate and secure better terms. This would lead to disadvantages to smaller participants and result in cost and complexity that arises with bi-lateral negotiation.

The second option in principle allows for flexibility in pricing between parties. In practice we would expect similar outcomes between the first and second option. We would expect that most participants will use the fallback price and bi-lateral negotiation to be rare. Any negotiation would always lead to one party being worse off compared to the fallback price. That party should always prefer the default price and as services must be supplied, there is no reason to agree to a different price.

Given the above assessment we recommend that the focus is on a multi-lateral approach. This could take the form of a required default price or a fallback price, subject to ensuring compliance with competition law.

9.4 Market or individual price

The prices within an MLA can have different coverage, with two main options:

1. A market-wide price that applies to all ASPSPs based on a market-wide assessment (e.g. of average cost of provision).

2. An individual price for each ASPSP, tailored to their specific costs or other factors used to determine price.

Table 14 outlines our assessment. We recommend adopting a single market-wide price based on market fairness, transparency, and adoption.

Table 14 Market or individual price: evaluation summary

Principle	Option 1: Market price	Option 2: Individual price by ASPSP	Evaluation
1. Reflect long-run costs			Both options can reflect either the average long run costs of the market, or participants individually.
2. Incentives for investment and innovation			An average market price can incentivise efficiency: ASPSPs are rewarded for reducing costs relative to the market price. This can risk participation if some ASPSPs have very high costs compared to the market average.
3. Incentives for adoption			The simplicity and transparency of a single price can reduce barriers to entry and promote adoption among ASPSPs and PISPs. It may disincentivise adoption from less efficient ASPSPs.
4. Pricing should treat sending firms and PISPs fairly			A single price ensures uniform pricing across all market participants, and reduce the risk of price uncertainty and different outcomes for PISPs. ASPSPs may be disadvantaged where they are inefficient in the provision of their services or where they provide a greater level of service. The former does not treat such firms unfairly and rather provides an incentive for cost efficiency. This is similar to the pressures an ASPSP would face in a competitive market. On the latter, our expectation is that there will not be a material difference in service between ASPSPs for Wave 1. That may be a more material consideration for later Waves.
5. Pricing should be transparent and simple			A single price is simpler, more transparent, and avoids adding significant complexity to the pricing process. Individual prices for ASPSPs will introduce significant complexity and uncertainty for PISPs and Billers. The overall cost to each may depend on their customer mix and the balance of transactions between ASPSPs.
6. The methodology should be clear and transparent			The methodology supporting a single price can also be more straightforward to understand and challenge.

Source: Frontier Economics assessment against the FCA and PSR's principles

Individual pricing for ASPSPs would help to ensure all ASPSPs have an incentive to provide cVRP, especially where there are significant divergences in cost, risk or differences in service or value that should be recognised in the price. But in the case of cVRP we would expect that the 'core' service is relatively standardised and there is no strong rationale for divergences in

cost other than inefficiency. As such, individual pricing is likely to accommodate such inefficiency to the detriment of adoption among PISPs and billers.

By contrast, a market wide approach that reflects the 'average' of ASPSPs should provide stronger incentives for efficiency as ASPSPs are able to keep cost savings as higher margin. Some of these savings can be passed to PISPs and merchants over time through the re-evaluation of the price in the MLA.

A market-wide price appears clearly preferable given the stronger alignment to driving the appropriate incentives and greater transparency and simplicity.

9.5 Pricing structure

There are a range of pricing structures that can be considered for Wave 1. A consistent view across stakeholders is that pricing for Wave 1 should remain as simple as possible. We have considered two main dimensions for structuring the price. The first is the **form** in which prices are set, which could be:

- **Fixed charge.** A set charge per transaction (e.g. 1p per transaction). This generally supports costs are flat that do not change with value of the transactions.
- **Ad valorem charge.** A percentage-based fee (e.g., 10 bps per transaction). This structure is typically used when costs change with the transaction value (e.g., liability costs on fraud).
- **A combination of fixed charge and ad valorem charges.** This would charge a baseline fixed amount as well as an ad valorem percentage.

There are some variations that can be applied to the above. For example, an ad valorem charge could be capped at a fixed amount in order to limit the maximum charge that applies. Fixed charges could also be varied by payment value in order to reduce the cost (and improve the competitiveness of cVRP) for low value payments.

We recommend setting a simple fixed charge for Wave 1. This aligns best with the PSR and FCA's pricing principles, as summarised in Table 15. In particular, we expect a fixed charge to best align with ASPSP's cost drivers. As Wave 1 is low risk and ASPSPs are not expected to bear liabilities, costs are likely to be broadly insensitive to the value of the payment, where an ad valorem charge may be more appropriate.

The impact on adoption is more complex. Fixed charges are more expensive for low value payments and cheaper for high value payments (relative to an ad valorem charge). Given the use cases involved in Wave 1, it is likely that most payments (such as for financial services and utilities) will be for values that could range from £50-£100 to many hundreds of pounds. Comparability to alternatives is made difficult by the varying charging structures that exist between payment option and Biller, however we consider this further in Chapter 10.

The considerations for later Waves may look very different. If ASPSPs bear liabilities this may create a much more significant link between payment value and cost. Payment values for later Waves may also cover a much broader range, including far higher levels of low value payments (e.g. small subscriptions for tens of pounds or less). This may point away from a fixed charge. Further consideration will need to be given to these issues when designing the commercial model for later Waves.

Table 15 Pricing form: evaluation summary

Principle	Option 1: Fixed charge	Option 2: Ad valorem charge	Evaluation
1. Reflect long-run costs			Fixed charges can align best with long-run cost recovery, particularly when costs are not strongly driven by transaction value.
2. Incentives for investment and innovation			Both pricing structures can similarly incentivise investment.
3. Incentives for adoption			A fixed charge is more likely to support broad adoption given the likely payment values for Wave 1 use cases and the implied competitiveness relative to alternatives.
4. Pricing should treat sending firms and PISPs fairly			Both pricing structures can be fair.
5. Pricing should be transparent and simple			Choosing one of the two charges (either fixed or ad valorem) can offer simplicity and transparency.
6. The methodology should be clear and transparent			Fixed charge methodology is simpler and more straightforward, as it does not require modelling different transaction values.

Source: Frontier Economics assessment against the FCA and PSR's principles

Across either option it is also possible to consider variations in prices to account for competitive dynamics. The main set of options relates to the potential to offer 'tiered' pricing whereby pricing varies based on the volume of payments for a Biller. The two main variants include:

1. **Price tiering (volume discounts).** Lower fees for higher transaction bands (e.g., 1p per transaction below 1,000 transactions, decreasing to 0.5p after).
2. **Price tiering (small Biller discount).** Lower fees for lower transaction bands (e.g., 0.5p per transaction below 1,000 transactions, increasing to 1p after).

Both options serve different purposes and require considering their trade-offs and wider implications:

- **Volume discounts** are widely used in other payment methods and can support cVRP adoption by making it more competitive. This approach rewards higher usage, which could encourage payment substitution by incentivising participants to use cVRP more frequently, while also generating savings through economies of scale. It can offer cost savings for billers handling large transaction volumes or multiple services. However, since a significant portion of costs are operational in nature, volume discounts may fail to fully account for the increased operational costs associated with higher transaction volumes (e.g., rising infrastructure and transaction processing costs).

- **Discounts for small Billers** may be effective if costs decrease (or value increases) with a higher number of participants. This could help foster adoption over time, as more small billers are incentivised to adopt cVRP, thereby increasing the network effect. It can also provide cost savings for smaller billers that don't benefit from economies of scale, helping to build a broader user base. However, while this approach could facilitate broader adoption, the discount structure may not align with the underlying cost drivers for ASPSPs. The fixed costs of the payment infrastructure may not be adequately distributed, potentially resulting in larger players subsidising smaller ones.

While these approaches could help drive adoption, we understand that the functionality and capacities available in the initial launch of Wave 1 are unlikely to be able to support tiered pricing. We therefore recommend deferring their introduction and for the Operator to consider at a later date whether there is value in introducing such pricing structures.

Table 16 Price tiering: evaluation summary

Principle	Option 1: Volume discount	Option 2: Small biller discount	Evaluation
1. Reflect long-run costs			Neither option may fully reflect the long-run costs for ASPSPs. Volume discounts may fail to account for the increased operational costs of higher transaction volumes, while small participant discounts may not adequately cover the share of fixed costs.
2. Incentives for investment and innovation			Both options could incentivise investment to the extent that they drive greater volume and scale for cVRP.
3. Incentives for adoption			Both options incentivise adoption among specific groups. Volume discounts encourage greater use by larger billers, while small biller discounts encourage broader participation. Overall volumes may be best supported by volume discounts.
4. Pricing should treat sending firms and PISPs fairly			A volume discount may benefit larger billers, while small participant discounts may favour smaller firms.
5. Pricing should be transparent and simple			Both options are relatively simple in concept but could become complex if multiple tiers or thresholds are introduced.

Principle	Option 1: Volume discount	Option 2: Small biller discount	Evaluation
6. The methodology should be clear and transparent			Both options can be clear but require transparent definitions, especially in setting volume thresholds or determining the criteria for small participant status.

Source: Frontier Economics assessment against the FCA and PSR's principles

9.6 Pricing by use case

Pricing for Wave 1 could take two different forms:

1. **A single price (or set of prices) across all Wave 1 use cases**. This option involves adopting the same model and price point for each Wave 1 use case.
2. **Different prices for each Wave 1 use case**. This option involves setting varying prices based on the specific use case within Wave 1.

The principle basis for any such decision is:

- whether the costs are materially different between use cases to justify a difference in price; and/or
- if there are very different willingness to pay between use cases so that different prices might facilitate adoption.

Such considerations need to be balanced against the greater complexity such models create and the practical challenges of implementing them.

From our discussion with ASPSPs most do not (currently) routinely distinguish between the individual Wave 1 use cases. There is as such relatively limited insight and evidence on the degree to which risk, costs and willingness to pay may vary. One stakeholder noted that rail payments may be different as the service has not been 'consumed' when the purchase is made. That can increase the level of disputes and associated costs. There is however not a substantive evidence base to make the case at this stage for a materially different cost basis between use cases.

Willingness to pay could also vary by use case, but the theme that has emerged in our discussion with stakeholders is a sensitivity to price in general rather than for any specific use case in Wave 1.

Given the above, our view is that a single price (or set of prices) is a sensible and practical starting point for Wave 1 cVRP. This point could be re-evaluated in future as evidence is gathered on the actual costs and market dynamics between use cases.

Table 17 Pricing by use case: evaluation summary

Principle	Option 1: A price for Wave 1	Option 2: A price by use case	Evaluation
1. Reflect long-run costs			There is no evidence that costs are materially different between Wave 1 use cases.
2. Incentives for investment and innovation			Both approaches can facilitate investment and innovation.
3. Incentives for adoption			Simpler pricing can encourage adoption by reducing uncertainty and administrative burden. Differentiated pricing could facilitate adoption where there is greater price sensitivity, but it is not currently clear sensitivity varies by use case.
4. Pricing should treat sending firms and PISPs fairly			No difference *per se* between the options.
5. Pricing should be transparent and simple			A single price is clearer, easier to communicate, and reduces administrative burden.
6. The methodology should be clear and transparent			The methodology would be more complex to estimate the difference in costs (or other factors) between use cases.

Source: Frontier Economics assessment against the FCA and PSR's principles

9.7 Options to discount pricing in the early phases of rollout

The PSR and FCA's principles recognise that ASPSPs should be able to recover their long-term costs. However, the principles also focus on ensuring there are incentives for adoption across the ecosystem and explicitly note that it may be appropriate for some costs (including upfront investments) to be delayed in their recovery to facilitate adoption. While the volume of cVRP is low such options may facilitate the competitiveness of cVRP compared to alternatives and help support faster growth.

There are in practice a number of different options that could be considered to provide a lower and more competitive price in the initial rollout of Wave 1. Decisions can be made about whether to include each component in an assessment of the price. The removal of one or more components will lower the price, but will also have an impact on the incentives for ASPSPs to adopt and support cVRP.

The strength of these effects will vary and we consider them in broadly rising order of impact as follows as set out in Table 18 below.

Table 18 Options to lower the initial cVRP price

Potential component of price	Option	Assessment
Contribution to fixed joint and common costs ("shared costs")	Assumed to be excluded	As outlined in Chapter 7, there is a case for inclusion (especially to support a wider range of business models) but not practical or proportionate for the initial rollout.
Fees to cover the costs of the Operator	Delay recovery and share with later Waves	A material cost that will be applicable across all use cases. Likely to be difficult to fully recover in the short-term if volumes are low. Delay in recovering such costs is a common business practice but would normally be expected to be compensated with a higher return.
Upfront shared cVRP investment costs	Delay recovery and share with later Waves	
Upfront Wave 1 cVRP investment costs	Delay recovery	Also likely to be difficult to recover in the short-term and a strong case to spread recovery of these costs across the pricing of each Wave.
Margin	Delay margin	Common to earn a lower margin in the early growth phases of a new service. Reduces incentive to invest and adopt cVRP for ASPSPs, but potential to compensate as cVRP matures.
Ongoing incremental costs (fixed and variable)	Delay some or all recovery of incremental costs	Would make cVRP incrementally loss-making. Businesses do sometimes operate at a loss in the short-term, but creates the strongest disincentive for ASPSPs to support cVRP. Also disincentivises scaling as losses rise with the growth of cVRP. This makes it important to adjust prices to recover incremental costs as quickly as possible.

Source: Frontier Economics

These options and the impact they have on the potential initial pricing of cVRP are considered further in Chapter 10.

9.8 Transitioning from the initial price to the long-term price

Pricing initially set below the level that would allow for the recovery of relevant costs and an appropriate margin will need to transition to a sustainable long-term level. It is not possible to be definitive about how quickly that transition should happen, but it will depend on a number of factors:

- **The strength of disincentive for ASPSPs**. The more costs are delayed for recovery, the less incentive there is for ASPSPs to invest and adopt cVRP. This creates greater urgency to adjust prices as volumes grow to allow for those costs to be fairly recovered.
- **The growth of Wave 1 cVRP**. The faster billers adopt cVRP and the greater the volume of payments the easier it will be to adjust pricing to allow for a full recovery of costs and associated margin while still retaining a competitive pricing position relative to substitutes.
- **The rollout and success of later Waves**. Shared costs between Waves can be delayed and recovered between the Waves. To the extent this occurs, the speed and growth of later Waves will also be a relevant factor as to when and how much cost is recovered through Wave 1 pricing.
- **The relative pricing position of cVRP and sensitivity to price**. The closer that cVRP Wave 1 is in price (all else equal) the more challenging it is to amend prices to allow for a full recovery of cost.
- **The value of certainty and stability in pricing**. We have heard that billers will value certainty in the prices that they pay, with greater certainty encouraging investment and adoption. This suggests aiming to minimise the frequency of price changes, providing as much transparency over likely future prices and minimising the degree of change.
- **The actual costs of providing cVRP**. Our work by necessity is based on costs estimated by ASPSPs. As cVRP is rolled out actual costs will be incurred and may differ from what has been estimated. As cVRP matures it is sensible to re-evaluate the level of actual costs and what that implies for a price that would recover them.

In Chapter 10 we give consideration to these factors, especially how pricing might look under different scenarios of growth for cVRP. Our analysis provides an indication to the Operator about how transition could occur. For our analysis we assume an initial 5 year 'adoption' period followed by a further 5 year 'recovery' period. These time periods were chosen as they are typical in regulatory price setting, providing a reasonable degree of certainty for participants. Five years also allows time for cVRP to be adopted and grow and for any price changes to hopefully occur at a point where cVRP volumes have materially grown.

This choice will also depend on whether the Operator chooses to operate separate commercial models for Wave 1 and later Waves or implements a single commercial model. If a single commercial model is chosen that may speed up the point at which Wave 1 pricing is amended so that a revised price is applied across all Waves.

The Operator will need to determine its preferred approach between the Waves and then continue to evaluate the speed and extent to which it is advisable to amend Wave 1 pricing as cVRP is rolled out and the market develops.

9.9 Frequency of re-pricing

Beyond the transition from the initial price to a longer-term price level there is also a decision about whether and how frequently there is further regular re-pricing (either as separate commercial models for Wave 1 and later Waves or as a single commercial model).

In either case, the value of regular re-pricing is that it can ensure that the price is a fair reflection of the cost of delivering cVRP. To the extent ASPSPs achieve efficiencies these can be incorporated into a revised price to benefit of PISPs and billers and the competitiveness of cVRP. Re-pricing can also account for wider changes in the competitive landscape (e.g., changes in the cost of alternative payments).

The frequency of re-pricing needs to balance these potential advantages against the disadvantages, which overlap with the issues set out above for the transition to a mature price. In addition, it is important that there is sufficient time for ASPSPs to benefit from efficiencies that they are able to achieve. If re-pricing happens too frequently this will diminish the benefit of any cost efficiencies ASPSPs are able to achieve (the higher margin they receive from such efficiencies). This may lead to a more costly provision of cVRP than could otherwise be achieved.

A final factor to account for is the time and cost of running a pricing exercise. This takes resource from ASPSPs and from the Operator and may grow in cost and complexity as cVRP matures. It is only worthwhile conducting such an exercise if the competitive landscape and/or cost base is likely to have substantively changed.

Given these and other factors it is as already noted common to see re-pricing exercises every 5 years or so in regulated sectors.[45] We recommend that guided by these considerations the Operator in time determines whether and how frequently to review and revise pricing.

[45] For example, Ofwat conducts a price review every 5 years. There are cases of regulated prices being updated more frequently, with one of the most frequent being the energy price cap which is updated every 3 months. However, the latter is subject to significant price volatility that is contingent on wholesale energy markets.

10 Assessment of potential prices for Wave 1

This chapter outlines the potential prices that could be set for Wave 1 cVRP based on estimated costs and potential volumes for cVRP. Our approach brings together the analysis and the choices that have been set out in preceding chapters. In particular we need to consider the commercial model that meets the PSR and FCA's pricing principles and will support the adoption of Wave 1 cVRP. In considering the price that ASPSPs could charge that means assessing:

- **The incentives for ASPSPs to invest in and promote Wave 1 cVRP**. This will be influenced by their ability to recover costs and earn a fair return, as well as the returns they can earn on other substitutes to cVRP.
- **The incentives for Billers and Payers to adopt Wave 1 cVRP**. Billers in particular will be sensitive to the price that they pay relative to alternative options.
- **The incentives for PISPs to invest in and provide services relating to Wave 1 cVRP**. This will depend on their ability to earn a return, which will in turn be influenced by their expectations of the competitiveness of cVRP and the likelihood of it scaling as a viable alternative payment option.

Given these considerations, the structure of this chapter is as follows:

- **Potential costs of Wave 1 cVRP**. 6 ASPSPs have shared their estimates of upfront and ongoing costs of providing cVRP. Costs have also been estimated by OBL for the Operator of the MLA. There are a range of views of potential costs, which is to be expected given that Wave 1 has not yet been implemented. Recognising this, we provide a central estimate and a range of potential costs for Wave 1.
- **Potential margins for Wave 1 cVRP**. Based on the approach and evidence on potential margins outlined in Chapter 7.2, we use a margin of 10% as our primary estimate.
- **Potential volumes for cVRP**. Based on evidence from ASPSPs and our discussions with stakeholders we estimate the maximum potential 'addressable market' for Wave 1 cVRP. We apply historic growth rates from Open Banking (sweeping VRP) and vary these as a sensitivity. This produces a set of potential market shares for Wave 1 volumes over the next 5-10 years. For future Waves volumes, we have used volume estimates provided by OBL, which are also based on historic growth rates from Open Banking.
- **Potential prices for Wave 1 cVRP**. Combining cost, margin and volume scenarios we produce an estimated price for ASPSPs for Wave 1 cVRP. We calculate this price for two 'phases': the first 5 years of operation and a further 5 years after that. We outline 6 options for prices that could apply depending on choices that could be made to delay the recovery of specific costs or margins into the second 'phase'.
- **Pricing that supports adoption of Wave 1 cVRP**. We assess the pricing options against their likelihood of supporting the adoption of Wave 1 cVRP. This covers the competitiveness of pricing against alternatives such as Direct Debit and card transactions

(important for the willingness of Billers to adopt cVRP) and the incentives for ASPSPs to adopt cVRP (assessing the margin they may earn on other competing payments).

Bringing these pieces of analysis together we can consider if there is pricing that might provide sufficient incentive for adoption across each side of the market and would therefore be plausibly compatible with the growth scenarios.[46]

It is outside the scope of our analysis to assess in detail the commercial model of PISPs. Their incentive to adopt cVRP is partly addressed through assessing the competitiveness of cVRP. In that assessment we also factor in assumptions about the price that PISPs are able to charge based on the information we have received from discussions with several PISPs. We also consider the charges that apply for acquirers as an approximation to what may be appropriate for cVRP. Through these methods we have sought to ensure that our analysis provides scope for PISPs to also recover costs and earn a fair return.

A summary of our central results and key assumptions for costs, volumes and price is set out below. The annex provides additional estimates for the different sensitivities of costs and volumes. In most cases the central estimate of costs reflects the median costs provided by ASPSPs (to avoid distortions by outlier estimates) with minor rounding in some cases.

[46] An alternative approach is to formally model each side of the market for cVRP. Such an exercise would estimate volumes of cVRP based on an input of prices for the commercial model and the resulting incentive for adoption for each participant based on a set of assumed price elasticities. This type of exercise has the benefit of being internally consistent – pricing directly leads to volumes. It is however highly sensitive to the assumptions made about price elasticities. Our approach is simpler but crucially aims to test the consistency between price and volume by considering whether different participants would have an incentive to adopt cVRP.

Table 19 Summary of central results

Variable	Central estimate	Comment
Recoverable cost		
Total upfront costs (per ASPSP)	£1,850,000	Upfront costs mainly relate to implementing technical specifications with a smaller component for operational readiness.
Total ongoing variable costs (per transaction)	£0.051	Ongoing variable costs cover transaction costs, handling disputes and queries, FPS charges and the cost of the Operator (per transaction scheme fee).
Total ongoing fixed costs (per year)	£300,000 *+ £5,000 to £12,000 scheme membership fee*	Ongoing fixed costs mainly cover staff costs to manage and operate cVRP, and include a scheme membership fee.
ASPSP return (margin)	10%	This approximately reflects the margin of the one acquirer where data is available and earnings are not as reliant on non-comparable services.
Compensation for delayed recovery of costs	5%	We allow ASPSPs to earn the WACC on their deferred costs, directly reflecting the cost of financing
Potential uptake of cVRP *% of recurring payment volumes | Years after launch of Wave 1 cVRP*		
Wave 1 - year 5	1.2%	Wave 1 uptake is estimated by assessing the addressable market, derived from existing recurring payments in Wave 1 use cases, and projecting growth based on sweeping VRP trends.
Wave 1 - year 10	3.4%	
Later Waves - year 5	2.3%	Future Waves uptake uses volume estimates provided by OBL, which are also based on sweeping VRP's growth trajectory.
Later Waves - year 10	5.5%	
ASPSP Price *per transaction*		
Adoption period (years 1-5)	3-11p	Pricing options vary based on what costs ASPSPs are able to initially recover.

Variable	Central estimate	Comment
Recovery period (years 6-10)	5-7p	

Source: Frontier Economics analysis of data submitted by ASPSPs and PISPs and information provided on scheme costs by OBL.

Given the inherent uncertainty in ASPSPs' cost data and the future uptake of cVRP, our estimates should be seen as providing an evidenced indication of the likely magnitudes of costs, volumes, and resulting price points rather than precise forecasts.

The rest of this chapter considers the above results and assumptions in more detail. Chapter 11 summarises the implications of our assessment for pricing options and the relevant considerations for the Operator.

10.1 Recoverable costs per ASPSP

We collected data on upfront and ongoing costs from six large ASPSPs, and estimates of the 'scheme' costs from OBL:

- **Upfront costs** reflect the initial investments required to develop cVRP, including API development, operational readiness (e.g., training, communications, and specification changes), and the set-up of dispute processes, controls, and other MLA compliance measures.
- **Ongoing costs** capture recurring expenses needed to support cVRP over time. These include variable costs per transaction (e.g., processing, scheme and Faster Payment fees) as well as fixed costs for Wavecreating and maintaining the operational team).
- **Scheme costs** account for the expenses incurred by the Operator to run the cVRP MLA, which will directly determine the **scheme fee** charged by the Operator. This corresponds to both a per-transaction charge and an annual membership fee.

ASPSPs have had a limited window of time to prepare their cost estimates, and since cVRP is not yet in operation and costs have not been incurred, there is inherent uncertainty over the magnitude of costs.[47] As a result, we received a range of estimates across each cost category.[48] To account for this, we developed low, medium, and high estimates based on the data provided.

OBL provided data on the total expected scheme costs for the first five years of cVRP rollout. We engaged with OBL to understand their modelling of scheme costs, how their estimates

[47] To consolidate the data, we reviewed the cost estimates and comments provided by ASPSPs in detail to ensure that the appropriate costs were identified and allocated within each category consistently. We followed up with ASPSPs with clarifying questions where necessary.

[48] The degree of variation in cost estimates differed across categories. Some cost items showed general consensus among ASPSPs, while others had greater uncertainty. We discuss the ranges for specific cost items further below.

vary with volume and reasonable assumptions of scheme costs beyond year five. These costs were later combined with our volume projections to model the scheme fee per transaction under different volume scenarios, assuming cost recovery by the Operator in year five.

10.1.1 Upfront costs

Upfront costs amount can be divided into two broad categories:

- **Technical specifications** consists of the development of new API functionality and makes up the vast majority of upfront costs (c.85%).
  - ASPSPs consistently considered "v4 standards" in this cost category, specifically the development of error codes and payment status, as well as management information.
  - A few ASPSPs also mentioned additional infrastructure requirements but these were not included in our estimates as they either included ongoing fixed costs or were attributed to subsequent Waves.
- **Operational readiness** consists of costs associated with training and establishing dispute processes. This accounts for the remainder of upfront costs (c.15%).
  - ASPSPs consistently mentioned communication and training of frontline staff as well as set-up of the dispute process, however provided a wide range of cost estimates.

Some additional upfront costs were reported by ASPSPs but excluded from our estimated upfront cost. These largely related to shared infrastructure costs that support a broader range of products and services.[49] As outlined in Chapter 7.1, to support adoption and for pragmatic reasons we have set aside the recovery of shared costs that do not directly relate to the incremental costs of providing cVRP. Additionally, some reported upfront costs were reallocated to ongoing fixed costs, as their description indicated they would occur on a recurring basis.

Table 20 Upfront costs per ASPSP

Cost Item	Low	Central	High
Technical specifications	£800,000	£1,500,000	£2,800,000
Operational readiness	£150,000	£350,000	£500,000
Total	**£950,000**	**£1,850,000**	**£3,300,000**

Source: Frontier analysis of data submitted by 6 participating ASPSPs

[49] Reported costs did not include sunk costs related to previously mandated Open Banking infrastructure. As a result, our upfront costs do not consider any costs related to previously mandated Open Banking infrastructure such as sweeping VRP.

The range of upfront costs across the low, central, and high scenarios is substantial. Total upfront costs range from £1.0m (low) to £3.3m (high), driven by differing views on technical specifications. Most ASPSPs expected these costs to be between £1m and £2m. Operational readiness costs also have a large range, from £0.15m to £0.5m, but most ASPSPs are aligned around the central and lower estimates.

Upfront costs did not show a clear relationship to ASPSP size and are therefore expected to be fairly similar for each ASPSP providing cVRP. Given this, we scale fixed costs in our pricing model based on the number of participating ASPSPs. While many ASPSPs may eventually adopt cVRP, initial adoption may be limited to larger ASPSPs with greater scale and a clearer investment case. We assume nine ASPSPs will initially participate, covering 95% of recurring payment volumes and ensuring sufficient market coverage.[50] Over time, broader adoption may occur, particularly if transaction volumes increase and with the launch of later Waves of cVRP.

Comments received from ASPSPs suggested that these upfront investment costs are also likely to be relevant for future Waves of cVRP. For this reason, in our scenario modelling we assume that the repayment of the upfront investment is shared across all Waves' volumes.

10.1.2 Ongoing incremental costs

Ongoing costs are divided into fixed and variable components:

- **Ongoing fixed costs** reflect regular annual investments that are required for the provision of Wave 1 cVRP and do not vary with transaction volumes. This corresponds to operational costs, including staff costs for admin and service management, legal matters, analysis and billing, and scheme compliance costs. An annual scheme membership fee is also included, based on estimates from OBL.
- **Ongoing variable costs** are incurred for each cVRP transactions. These include costs related to cVRP processing, customer queries, and dispute handling (provided by ASPSPs) as well as Faster Payments (FPS) fees and the per-transaction component of the scheme fee.

Some additional ongoing costs were reported by ASPSPs but excluded from our estimated ongoing costs. These largely related to development costs associated specifically with future Waves of cVRP, such as scaling platforms to handle higher volumes, specification improvements and developing more sophisticated dispute resolution processes. These costs are not specific to Wave 1 and should instead be recovered by future Waves. Ongoing costs related to general fraud prevention and customer protections are also excluded, as many of these costs are shared across all payments, and we expect that ASPSPs will not bear liability for Wave 1 payments.[51]

50 See here for market shares in retail banking: https://www.fca.org.uk/publications/multi-firm-reviews/strategic-review-retail-banking-business-models.

51 See section 9.1 above.

Faster Payments charges consist of both a per-transaction fee and fixed monthly charges. The per-transaction fee includes a transaction charge of £0.00881 and a Pay.UK service management fee of £0.01019.[52] Fixed monthly charges cover VocaLink fees and telecommunication costs. As fixed monthly fees are shared across all Faster Payments transactions, they are not considered part of wave 1's recoverable ongoing costs.

The scheme fee consists of a per-transaction fee and a yearly membership fee to cover the expected costs of the Operator. The scheme fee per transaction is calculated by combining OBL's estimated annual scheme costs with our volume projections (outlined in section 10.2) such that the Operator recovers its costs five years after the launch of cVRP. This cost is assumed to be shared equally between the ASPSPs and the PISPs. The membership fee is provided directly by OBL and expected revenues are subtracted from the expenses that need to be recovered from the scheme fee. In practice, the membership fee is expected to be a negligible way of covering the Operator's expenses and the vast majority will be recovered through the scheme fee (a per transaction fee).

Table 21 Ongoing variable costs per ASPSP

Cost Item	Low	Central	High
Processing costs	£0.002	£0.005	£0.010
Queries	£0.005	£0.010	£0.125
Dispute handling	£0.005	£0.008	£0.125
Total ASPSP estimated costs	**£0.012**	**£0.023**	**£0.260**
FPS per transaction fee (total)[1]	£0.010	£0.010	£0.010
Scheme fee[2]	£0.011	£0.018	£0.033
Total	**£0.034**	**£0.051**	**£0.303**

Source: *Frontier analysis of data submitted by 6 participating ASPSPs*

Note: *(1) Total FPS fees are known and do not vary across scenarios. The total consists of both the transaction charge of £0.00881 and a Pay.UK service management fee of £0.01019. (2) Scheme fee values vary by volume. For example, the lowest scheme fee corresponds to the high volume scenario, and the highest scheme fee to the low volume scenario.*

The range of ongoing cost estimates provided by ASPSPs varies across different cost lines. Processing costs have a relatively narrow range, from £0.002 to less than £0.010 per transaction, and most ASPSPS were around the central estimate. The costs of queries and dispute handling are based on assumptions on average cost and frequency of each event.

[52] These fees are paid by both the sending bank and receiving bank. See section 13 for the Faster Payments fee structure for 2025: https://www.wearepay.uk/wp-content/uploads/2025/01/Pay.UK-Faster-Payments-System-Principles-Jan-25.pdf.

Most ASPSPs provided values in line with our low and central estimates, with a few outliers reflecting higher levels of costs per dispute and/or prevalence of such costs.

Table 22 Ongoing fixed costs per ASPSP

Cost Item	Low	Central	High
Ongoing fixed costs (yearly)	£200,000	£300,000	£400,000
Scheme membership fee (yearly)	*Same as central*	£5,000 in year 1 £12,000 from years 2-5	*Same as central*

Source: Frontier analysis of data submitted by 5 participating ASPSPs

Ongoing fixed costs show a narrower range compared to per-transaction costs, with estimates varying from £200,000 to £400,000 per year. ASPSPs were broadly in agreement that staff costs are the main contributor to ongoing fixed costs, with some ASPSPs citing scheme management costs as an additional component.

The scheme membership fee is based on data shared by OBL. It corresponds to £5,000 in year 1 and £12,000 from year 2 to 5, paid by each ASPSP. The estimates for the following years are based on the year 5 fee updated for inflation.

For modelling purposes, as with upfront costs, all fixed costs were upscaled to market level by assuming nine ASPSPs will be initial adopters of cVRP. In addition, both variable and fixed ongoing costs were updated yearly to reflect inflation.

As with upfront costs, comments received from ASPSPs suggested that ongoing fixed costs are also likely to be relevant for future Waves of cVRP. This is reflected in our scenario modelling, as we assume that the repayment of ongoing fixed costs is shared across all Waves' volumes.

10.1.3 ASPSP returns

In Chapter 7 we set out an approach to returns that focuses on providing a fair margin for ASPSPs. In that analysis we gathered data on the margins of existing payment firms with some similarities to the cVRP services offered by ASPSPs. There are in practice relatively few comparators and available evidence suggests that a margin of 8-13% could be appropriate, though lower margins may also be reasonable in the early growth period of cVRP. This is based on an acquirer with a relatively narrow business models and discounts others (with higher margins) that also generate revenues from e.g. card issuing.

In this analysis we use a margin of 10% as our central estimate. We consider further below what this margin implies for ASPSPs' incentives to invest in and promote cVRP when

compared to margins they may earn on alternative payments. Note also that in scenarios where the recovery of costs are delayed the actual margin that ASPSPs may earn in the early years of cVRP is likely to be negative.

10.1.4 Compensation for delayed costs

As outlined in Chapter 9.7, our price scenarios account for the possibility of delayed cost recovery. When costs are deferred, ASPSPs should be compensated for the cost of financing these delays. In our price modelling, we allow ASPSPs to earn the WACC on their delayed costs, directly reflecting the cost of financing. Our analysis relies on WACC estimates from Professor Damodaran at the Stern School of Business, New York University, based on data from European banks as of January 2025. In our central scenario, we use a WACC of 5%.[53] We test the impact of higher and lower WACC values in the annex.

10.2 Potential uptake of Wave 1 cVRP

We collected data on payment volumes and values from three large ASPSPs, covering:

- **Payment volumes, values, and growth trends overall and by Wave 1 use case**, for Direct Debits, debit card on file, card on file and other payment types.
- **Number of new or amended payment instructions**. This was gathered on the understanding that Billers are only likely to offer cVRP to Payers who are setting up a new instruction.
- **Average number of payments made per payment instruction.**

As with cost data, ASPSPs had limited time to prepare their volume and value estimates. However, since data was collected on established payment types, there was generally more certainty over the magnitude of current payment volumes. There was less certainty on the allocation of volume across use cases and data related to payment instructions. For these, we had to rely on a sample of ASPSP data submissions, or consolidate ASPSP data with publicly available data.

We have used this data to estimate possible volume scenarios for cVRP, considering the addressable market for cVRP and potential growth trajectories over time.

10.2.1 Addressable market

Our modelling approach begins by estimating the maximum addressable market for cVRP, which includes all existing recurring payments (Direct Debits and card on file) within Wave 1

53 See “Cost of Capital by Industry Sector – Europe” here Data for current year. We consider the cost of capital for “Banks (regional)” as most suitable for ASPSPs. WACC does consider inflation, as investors factor in inflation when determining the required return, and this in turn impacts the financing costs of businesses.

use cases.[54] Using ASPSPs' volume data, scaled to the total market, and ASPSPs estimates of Wave 1 usage, we estimate a **maximum addressable market of c.4.2bn transactions per year**. Table 2 shows a breakdown of estimated recurring payment volumes overall and for Wave 1.

Table 23 Total potential market volumes by payment type

Payment type	Total payment volumes	Wave 1 payment volumes[1]	% Wave 1 out of total
Direct Debit	c.4.9bn	c.3.9bn	c.80%
Debit card on file	c.3.1bn	c.0.25bn	c.8%
Credit Card on file	c.0.9bn	c.0.08bn	c.9%
Total	**c.8.9bn**	**c.4.2bn**	**c.48%**

Source: *Wave one volumes and split from Frontier analysis of data submitted by ASPSPs and insights from stakeholder interviews. Direct debits total from PayUK Payment statistics.*

Note: *(1) The Wave 1 total is calculated by summing volumes across all Wave one use cases (utilities, government, regulated financial services, e-money charities and rail). Wave 1 payment volumes are concentrated in utilities and financial services across all payment types. For example, 55% of Wave 1 Direct Debits come from utilities, and 30% from financial services, with smaller shares in government (10%) and charities (4%). Debit and credit cards on file follow a similar pattern, with around 60% of Wave 1 volumes from utilities and 30% from financial services, and the remainder mostly from charities. Rail has a negligible share across all payment types.*

However, it would be unrealistic to expect cVRP to substitute all recurring payments. We therefore refine our estimate of the addressable market by accounting for the likelihood of Payers and Billers switching from other payments to cVRP in the long term.

Stakeholder interviews suggest that replacing Direct Debit with cVRP will be challenging due to Direct Debits' pricing, ease of use, and established presence. We conservatively assume that only vulnerable customers, who would benefit from greater flexibility and control, may transition to cVRP in the longer term. The FCA estimates that 5.5 million people (approximately 8% of the UK population) have fallen behind or missed payments for domestic bills or credit commitments in the past six months (as of January 2024).[55] We use this 8% figure as an approximation of the proportion of vulnerable customers, and the maximum proportion of Wave 1 Direct Debits that could be captured by cVRP.

54 Standing orders account for less than 1% of total payment volumes and are not considered a major source of substitution for cVRP, based on stakeholder interviews. While some substitution may occur, its impact is expected to be minimal. Therefore, we do not include standing orders in our analysis.

55 See here: Improving picture for personal finances, but many still struggling | FCA.

For debit card-on-file transactions, there is a stronger case for switching to cVRP, as it could theoretically replace all relevant debit card payments if priced competitively. We assume that all Wave 1 debit card-on-file payments could in principle move to cVRP in the longer term.

For credit card-on-file transactions, the scope and/or speed of transition is potentially more limited. Many credit card users either receive rewards (such as cashback) or rely on credit to pay their bills, which could make them less likely to switch. On the other hand, the increased flexibility of cVRP may be attractive to credit card users currently relying on credit. It is therefore unclear what proportion of Wave 1 credit card on file transactions could be replaced by cVRP. Given this uncertainty, we conservatively assume that both initial adoption and subsequent switching to cVRP will be lower among credit card users compared to users of Direct Debits and debit cards on file.[56]

10.2.2 Growth of cVRP

The growth of cVRP is fundamentally uncertain and there are few cases of similar new digital payments in comparable circumstances where evidence is available for us to use for growth assumptions. Our approach therefore relies on the growth rates seen for sweeping VRP payments, which are in turn informed by OBL's estimates of sweeping VRP volumes.[57] We apply these growth rates to our estimate of the addressable market before testing whether the resulting market shares look plausible under each price scenario.

We consider three components of cVRP growth: (i) Wave 1 cVRP volumes in year one; (ii) growth in Wave 1 cVRP volumes thereafter; and (iii) future cVRP Waves' volumes.

Initial capture of Wave 1 cVRP

To estimate cVRP adoption in the first year, we assess the share of recurring payments that originate from 'new instructions' – instances where payers actively choose how to set up their payments. These decision points provide an opportunity for switching to cVRP. Data from ASPSPs indicates that approximately 3% of recurring payments are new, with each instruction generating an average of 12 payments per year.[58] The maximum initial volume of cVRP payments is estimated by multiplying the number of new payments by the typical number of payments per recurring instruction.

Given the early stage of adoption, we assume only a small proportion of payers will switch to cVRP when setting up new instructions. Our central scenario assumes a 1% switch rate, which

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56 Assumptions on initial adoption and switching are explained in the next section. We also assume that only credit card users that struggle to keep up with repayments, and would benefit from cVRP, may transition to cVRP in the longer term. A recent Go.Compare study (December 2024) found that around 14% of credit card users face difficulties keeping up with repayments. We use this 14% as an upper bound for the share of Wave 1 credit card on file payments that could shift to cVRP. See here for the Go.Compare study: Are Brits becoming reliant on credit cards to make ends meet? | GoCompare.

57 These are, to our knowledge, the most reliable estimates of sweeping VRP volumes.

58 I.e. A newly set up direct debit would typically consist of 12 payments, before it is amended, cancelled or otherwise renewed.

is roughly in line with sweeping VRP adoption after one year. We conduct sensitivities around this, with 0.5% in the low volume scenario and 1.5% in the high volume scenario.[59]

Growth rate of Wave 1 cVRP

We then apply a growth rate to Wave 1 cVRP based on the annual growth pattern of sweeping VRP. Sweeping VRP grew quickly (in relative terms) in the second year before slowing to a more moderate rate. We conduct sensitivities around these growth rates, considering the impact of cVRP achieving slightly lower or higher volumes than sweeping VRP in the first two years.[60]

Table 24 Growth rate scenarios of Wave 1 cVRP

Growth rate	Low	Central	High
Annual growth between year 1 and year 2	231%	253%	278%
Annual growth rate after year 2	21%	26%	32%

Source: *Frontier analysis of OBL sweeping volume forecasts.*

Note: *"High" volume scenario assumes cVRP achieves 25% higher volumes than sweeping volumes for 24 months. "Low" volume scenario assumes cVRP achieves 25% lower volumes than sweeping volumes for 24 months.*

Combining initial capture and growth, our modelling suggests that Wave 1 cVRP will capture a relatively small share of the addressable market, particularly in the early years. This is expected, as new payment methods often take time to establish themselves and gain momentum. Over time, adoption is expected to increase, with a growing share of direct debits, debit card-on-file, and credit card-on-file payments switching to cVRP. The table below illustrates the projected market share of Wave 1 cVRP after five and ten years, under our different volume scenarios. A full time series of volumes is contained within the annex.

59 For credit cards, we assume a low initial switch rate of 0.5% across all scenarios.

60 For credit card on file, we assume lower volumes than sweeping VRP in all volume scenarios.

Table 25 Projected cVRP market share over time – Wave 1

	Low	Central	High
Year 5			
% of entire market[1]	0.5%	1.2%	2.1%
% of Wave 1	1.1%	2.5%	4.6%
Year 10			
% of entire market	1.2%	3.4%	3.7%
% of Wave 1	2.7%	7.8%	8.4%

Source: Frontier analysis of volume data provided by ASPSPs and growth assumptions from sweeping VRP.

Note: (1) The entire market considers the total volume of direct debit, debit card on file and credit card of file transactions. In our low scenario, switching from direct debits accounts for the majority (c.93%) of cVRP volumes. The remaining share is largely due to switching from debit card on file (c. 6%), with only about 1% coming from credit card on file.

Future Waves

Future Wave volumes are an important consideration for Wave 1's allocation of investment costs that are shared between Waves. The scope of our analysis is limited to the Wave 1 low-risk use cases, and therefore excludes a detailed modelling of volumes for later Waves. Instead, we have relied on volume estimates provided by OBL, which are also based on sweeping VRP's growth trajectory.[61] The table below illustrates the projected market share of future cVRP Waves, five and ten years after launch, under different volume scenarios. A full time series of volumes is contained within the annex.

Table 26 Projected cVRP market share over time – future Waves

	Low	Central	High
Year 5			
% of entire market[1]	1.4%	2.3%	3.8%
Year 10			
% of entire market	2.8%	5.5%	10.5%

Source: Frontier analysis of volume data provided by ASPSPs and growth assumptions from sweeping VRP.

Note: (1) The entire market considers the total volume of direct debit, debit card on file and credit card of file transactions.

61 Specifically, each Wave of cVRP is assumed to have similar volumes to sweeping VRP, with Waves launching at regular intervals based on estimated timing of each Wave's rollout. No other reliable estimates of future Waves were available for this analysis.

These estimates may be conservative, given the likely scale of future Waves' addressable market. UK Finance's work on the commercial model for later Waves may come to more refined estimates of the potential scale of volumes for later Waves.

10.3 ASPSP price scenarios

With recoverable costs and cVRP volumes estimated, we can determine the implied price for ASPSPs under different cost recovery scenarios.

We use a two-period model, consisting of an "adoption period" (period 1) and a "recovery period" (period 2). The adoption phase covers the first five years after the launch of cVRP, when volumes are relatively low. The recovery period spans years 6-10, once volumes have had time to grow. Scenarios of pricing are based on the potential to defer the recovery of some costs incurred in period 1 to period 2. This structure allows us to assess the implications of delaying the recovery of some costs on the price over time.

For each scenario we:

- calculate the required revenue to cover costs and margins;
- adjust the costs for inflation;[62]
- set the price so that it generates the required revenue based on the total estimated volume of cVRP payments in that period; and
- allow for any deferred costs to be recovered in the second period with a cost of capital applied to compensate ASPSPs for the delay in recovery.

For simplicity, a single price is set for each period. This price reflects the average that is required to cover relevant costs for the volumes expected over the period.

The table below presents our pricing results under different assumptions about cost deferral. These price estimates assume that cVRP volumes evolve as projected in the central volume scenario, with price ranges corresponding to the high and low volume scenarios. Upfront and ongoing fixed costs are shared across all Waves' volumes.[63] The results show that:

- Under a scenario of no cost deferral the price for cVRP will be materially higher in the adoption period (11p) compared to the recovery period (5p). This reflects the low volumes in the early phases of cVRP.
- Deferring a mixture of upfront investments, scheme costs and ongoing fixed costs could potentially balance pricing between the adoption period and recovery period. Delaying the recovery of upfront investment costs and ongoing fixed costs could lead to pricing of 6p /

62 We assume an inflation rate of 2% per year, in line with the Bank Of England's target level.

63 If upfront and ongoing fixed costs were repaid in period 1 recovered only using Wave 1 volumes, the adoption period fee would be 18p (12-34p) and the recovery period fee 6p (5-11p). We consider that this price is too high to support adoption, and that it would be fairest for all use cases to contribute to the recovery of shared cVRP costs. Therefore, we do not consider this scenario further.

6p. Delaying the recovery of upfront investments and scheme fees could lead to pricing of 6p / 6p.

- Allowing for the recovery of only variable costs would potentially lead to a jump in pricing in the recovery period. Scenario 5 only allows for the recovery of variable costs and margin and results in a price of 4p in the adoption period and 7p in the recovery period.

Actual pricing will of course be subject to the growth of cVRP. If volumes grow faster than projected then lower prices may be possible in the recovery period.

As outlined at the beginning of the chapter, these prices and associated volume scenarios are only plausible if the pricing encourages adoption between Billers, PISPs and ASPSPs. In the sections that follow we assess these pricing scenarios and whether they are feasible and compatible with the implied adoption of cVRP.

Table 27 Summary of ASPSP fee options (sensitivities in brackets)

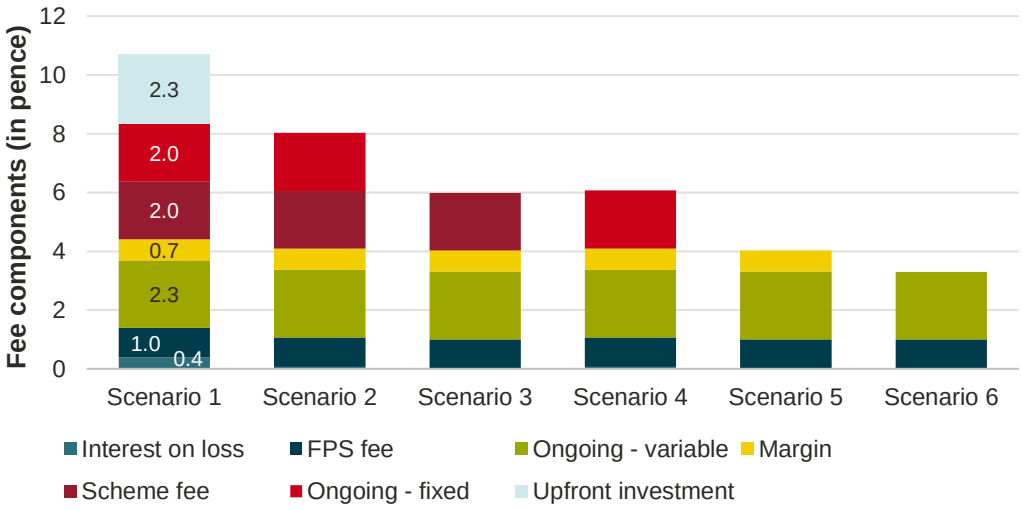
Scenario	Description	Adoption period price (Year 1-5)	Recovery period price (Year 6-10)
1	**Recover all costs** in period 1	11p (8-17p)	5p (4-6p)
2	**Delay recovery** of **upfront investment costs** to period 2	8p (6-12p)	6p (5-8p)
3	Delay recovery of **upfront investment** and **ongoing fixed costs** to period 2	6p (5-8p)	6p (5-10p)
4	Delay recovery of **upfront and scheme fee costs** to period 2	6p (5-8p)	6p (5-10p)
5	Delay recovery of **upfront, scheme fee** and **ongoing fixed costs** to period 2	4p (4p)	7p (6-11p)
6	Delay recovery of **upfront, scheme fee**, **ongoing fixed costs** and **margin** to period 2	3p (3p)	7p (6-12p)

Source: *Frontier analysis.*

Note: *Considering the central cost scenario. Sensitivities considering low and high cost scenarios are considered in the annex. Results presented to the nearest pence. The price ranges in each row refer to the low and high volume scenarios.*

The total fee for ASPSPs can be broken down as shown in Figure 5 below. This shows the composition of the ASPSP fee for each scenario. As Figure 5 shows, the largest costs in period 1 per transaction are upfront investments, ongoing variable costs per transaction, scheme fees and ongoing fixed costs.

Figure 2 Components of the ASPSP fees



Source: Frontier Economics.

10.4 Competitiveness of potential pricing

To assess whether the estimated prices for ASPSPs are competitive enough to drive adoption among Billers, we need to consider what the total cVRP price could be relative to alternatives. Such price comparisons can be highly complicated given pricing in payments can vary for many different reasons. Chapter 8 sets out a summary of pricing for Direct Debit and card payments.

Given the use cases in Wave 1 our expectation is that most Billers are likely to be larger firms such as utilities, government, railway companies or larger financial institutions. For that reason we focus on the prices that such larger Billers would be likely to face with alternative payment options.

To assess the total price for cVRP we need to consider the other parts of the value chain alongside sending ASPSPs, namely PISPs and the Receiving ASPSP. We have estimated the fee levied by each as follows:

- PISPs charge 10p to Billers in addition to the calculated sending ASPSP fee. This is a conservative estimate[64] and is likely to allow PISPs to earn a sufficiently high margin to incentivise their participation in cVRP; and

[64] Six PISPs provided estimates of the total charge they might levy on billers for cVRP. A 10p **total fee** is a central view of the data received and significantly above the current margin earned on sweeping (this margin was shared by only one PISP). The information provided did not specify what portion of the fee PISPs might charge above the ASPSP fee. Therefore, we have taken a conservative approach, assuming the full PISP fee of 10p will be added to the sending ASPSP fee when charging Billers. This does include a share of scheme fees (approx. 1.5p).

- the Receiving ASPSPs pay a 1p fee for FPS transactions and can also levy a charge on Billers to receive cVRP payments. Insight received from stakeholders suggests such fees can vary from 2p per transaction to much higher values, depending on Biller size and relationship with the ASPSP. We believe that large Billers are more likely to adopt cVRP in Wave 1 use cases, so 2p is a reasonable estimate of the Receiving ASPSP fee.

The table below compares the total cost to large Billers under each cVRP scenario against alternative payment methods at different transaction values.[65] Red cells indicate that cVRP is more expensive than credit cards, green cells indicate it is cheaper than debit cards, and yellow calls are in-between. The charges for debit and credit card payments are based on figures in Chapter 8 and we assume that Billers are able to achieve the more competitive rates in the ranges highlighted there.

This comparison highlights that:

- cVRP is unlikely to be competitive in price when compared to what large Billers can pay on Direct Debit. This is true at all payment volumes. As previously noted, adoption from Direct Debit is more likely to be driven by other factors (such as flexibility for vulnerable customers) and for smaller Billers for whom Direct Debit can be more expensive.
- Under most scenarios for Wave 1 pricing cVRP is less competitive than debit and credit cards for transactions below £50.
- Scenarios that defer the recovery of some costs can be competitive with debit cards at transaction values between £50 and £75.
- Under all scenarios cVRP can be materially cheaper than cards for larger transactions of £100 or more. This may be most relevant for some financial services transactions (e.g. monthly investments).

From discussions with stakeholders and given the nature of Wave 1 payments, we expect average transaction values to be greater than £50. This suggests that scenarios that defer the recovery of some costs could facilitate a competitive offer for the average transactions relative to card transactions.

[65] We present an equivalent comparison for small and medium billers in the annex.

Table 28 Total fee to large Billers under different scenarios for cVRP vs. alternative payment methods.

	Proportion of total Biller fee over transaction value				
Period 1 total fee to Billers	**£10**	**£50**	**£75**	**£100**	**£500**
Scenario 1 – 23p	2.30%	0.46%	0.31%	0.23%	0.05%
Scenario 2 – 20p	2.00%	0.40%	0.27%	0.20%	0.04%
Scenario 3&4 – 18p	1.80%	0.36%	0.24%	0.18%	0.04%
Scenario 5 – 16p	1.60%	0.32%	0.21%	0.16%	0.03%
Scenario 6 – 15p	1.50%	0.30%	0.20%	0.15%	0.03%
Alternative payments	£10	£50	£75	£100	£500
Direct debit – 1p	0.05%	0.01%	0.01%	0.01%	0.00%
Debit cards – 0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Credit cards – 0.35%	0.35%	0.35%	0.35%	0.35%	0.35%

Source: *Frontier Economics*

Note: *The estimates provided are tailored to large Billers as they will likely make up most of the Wave 1 volumes. The cVRP fee is made up of the ASPSP fee under different scenarios of repayment, plus an assumed 10p charge from the PISPs and 2p from the Receiving bank. Cells in red refer to fees above credit cards, cells in yellow are between debit and credit card fees and cells in green contain values below debit card fees.*

It is possible that the charge PISPs levy is lower than the 10p set out above. As a sensitivity we assess the competitive position if PISPs charge around 5p instead for larger merchants. This is likely to be a lower bound of what PISPs charge considering that they may have to pay scheme fees (which are estimated at a little over 1.5p). This has relatively limited effect on the competitiveness of cVRP. The main change is that scenario 1 and 2 (where ASPSPs recover all or most costs) become competitive with debit cards at the £75 mark rather than £100.

Table 29 Total fee to large Billers under different scenarios for cVRP vs. alternative payment methods (lower PISP fee)

	Proportion of total Biller fee over transaction value				
Period 1 total fee to Billers	**£10**	**£50**	**£75**	**£100**	**£500**
Scenario 1 – 18p	1.80%	0.36%	0.24%	0.18%	0.04%
Scenario 2 – 15p	1.50%	0.30%	0.20%	0.15%	0.03%
Scenario 3&4 – 13p	1.30%	0.26%	0.17%	0.13%	0.03%
Scenario 5 – 11p	1.10%	0.22%	0.15%	0.11%	0.02%
Scenario 6 – 10p	1.00%	0.20%	0.13%	0.10%	0.02%
Alternative payments	£10	£50	£75	£100	£500
Direct debit – 1p	0.05%	0.01%	0.01%	0.01%	0.00%
Debit cards – 0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Credit cards – 0.35%	0.35%	0.35%	0.35%	0.35%	0.35%

Source: *Frontier Economics*

Note: *The estimates provided are tailored to large Billers as they will likely make up most of the Wave 1 volumes. The cVRP fee is made up of the ASPSP fee under different scenarios of repayment, plus an assumed 5p charge from the PISPs and 2p from the Receiving bank. Cells in red refer to fees above credit cards, cells in yellow are between debit and credit card fees and cells in green contain values below debit card fees.*

In Annex B we test the competitive position for smaller and mid-sized Billers. We assume higher charges for PISPs and receiving ASPSPs and find that cVRP could still be a competitive option for these Billers.

10.5 Incentives for ASPSPs to promote and investing in cVRP

Alongside incentives for adoption by Billers and PISPs we need to consider what the incentives may be for ASPSPs. In our analysis we have taken a central assumption of a 10% margin for ASPSPs. This does in principle provide an incentive for ASPSPs to promote and invest in cVRP. Incentives will however also depend on the balance of returns between cVRP and the payments it substitutes from. Estimating the relative returns for ASPSPs is complex and depends on:

- **The returns earned on substitute payments**. For Direct Debits this is straightforwardly zero. Margins for card transactions will be non-zero and are difficult to estimate as they will depend on the costs of providing debit and credit cards, the formal assessment of which lies beyond the scope of our analysis.

- **The composition of substitution between Direct Debit and card payments**. The average margin of a substitute to cVRP will depend on the balance between Direct Debit and card payments. In the extreme, if Wave 1 cVRP only substituted for Direct Debit than the comparable margin is zero. In practice, and in line with our volume scenarios, we expect some mix of substitution across all of these payment options.
- **The value of the payment**. For Wave 1 use cases the margin earned by an ASPSP for a debit or credit card payment is likely to vary by payment value (on the assumption that costs will also be relatively fixed per transaction). The average value of cVRP payments will therefore influence the comparable margin.
- **The relative margin on later Waves of cVRP**. ASPSPs will be incentivised by not just the relative margin they can earn on Wave 1, but also the incentives they may face across the entire portfolio of cVRP transactions. The pricing of later Waves is therefore also an important factor in the decision as to whether ASPSPs will promote and invest in cVRP.

We cannot fully address these issues within the scope of our analysis. However, we have sought to provide an estimate of plausible returns for Wave 1 cVRP compared to other payment options. The table below sets this out by transaction value. For this analysis we have:

- estimated the cVRP margin realised at the end of the adoption period (year 5), as 10% of all ongoing costs incurred that year (ongoing fixed and variable costs, including the scheme and FPS fees);
- assumed a mix of payments for cVRP between Direct Debit and cards based on the growth rates set out earlier in this chapter (which implies a mix of 93% Direct Debit, 6% debit cards and 1% credit cards); and
- calculated the margin for debit and credit cards on file as the interchange fee (20 and 30 bps respectively) minus any operational costs (4bps for the scheme fee and 2.5p for other ongoing variable costs, in line with the cVRP estimates[66]).

The Table below sets out the results which show how the cVRP's margins for ASPSPs compares to the equivalent mix of Direct Debit and card transactions for different transaction values. cVRP offers a higher margin for transactions up to £82. The result is driven mainly by the zero margin on Direct Debit and the high proportion of such transactions in the expected mix of substitutes to cVRP. If the proportion of Direct Debit in the mix was to decrease, cVRP would only offer a competitive margin on transactions of lower values. This analysis suggests that a margin of around 10% could be a reasonable starting point to incentivise ASPSPs.

Given the trade-offs and complexities involved, this is an issue that should be revisited in the setting of prices for later Waves. That pricing will also influence the incentives for ASPSPs to invest in and promote cVRP as a whole.

66 Our central cost estimate for cVRP ongoing variable costs is 2.3p per transaction, made up of 0.5p for processing costs, 1p for queries and 0.8p for handling disputes. Given inflation, this amounts to 2.5p by end of year 5. Our underlying assumption is that card payment are subject to similar variable operational costs for these use cases (low risk).

Table 30 ASPSPs' incentives: margin earned by transaction value for cVRP compared to the equivalent mix of Direct Debit and cards

Payment method	£10	£50	£75	£100	£500
cVRP	0.08%	0.02%	0.01%	0.01%	0.00%
Weighted margin of Direct Debit and card payments	-0.01%	0.01%	0.01%	0.01%	0.01%

Source: *Frontier Economics.*

Note: *The alternative margin represents what an ASPSP could earn on Wave 1 volumes if it chose not to adopt cVRP. Our model estimates that on year 5 (end of the adoption period), 92% of cVRP volumes would otherwise be Direct Debits, 6% debit card on file, and 2% credit card on file transactions.*

11 Conclusions

Our work in this report has sought to assess the potential commercial model for Wave 1 cVRP. We have set out the key methodology and design choices that needed to be made and assessed them against the PSR and FCA's pricing principles. That assessment has led us to conclude that there should be a commercial model set within the MLA for sending ASPSPs and that for Wave 1 it is appropriate to have a single price that takes the form of a fixed-pence-per-transaction charge which will be paid by PISPs.

Our analysis of pricing methodologies has led us to conclude that we can ground our assessment in a cost-based approach, but that to meet the PSR and FCA's principles it is important to assess any pricing with respect to the incentives it creates for adoption across both sides of the market. That includes an assessment of the competitiveness of the potential price for cVRP that Billers will pay compared to alternatives and the returns that ASPSPs may earn compared to the same alternatives. We have also factored in a cost and return for PISPs who will need to earn a reasonable return to justify their own investments.

We have gathered evidence from ASPSPS and PISPs, including evidence on costs for ASPSPs to invest in and operate cVRP and the potential scale of the addressable market for cVRP. In Chapter 10 we have assessed plausible pricing and potential options. We have developed several options for pricing based on the extent to which the recovery of different costs are deferred into the future. We have also assessed those options against the incentives they create for Billers (especially larger Billers) and ASPSPs. That analysis shows that:

- **Scenarios that have no delay of cost recovery may lead to prices of around 11p per transaction**. This pricing point is likely to be less competitive against alternatives including debit and credit cards and therefore may not align well with the PSR and FCA's pricing principles on incentivising adoption.
- **Scenarios that delay the recovery of material costs including upfront investments and scheme costs may lead to prices around 6-8p per transaction**. These pricing points may lead to cVRP being broadly competitive with debit and credit cards. The delay in recovery creates a disincentive for ASPSPs but that may be balanced against the long-term value and margin that they may receive from cVRP.
- **Scenarios that delay the recovery of most costs and margin could lead to prices as low as 3-4p per transaction (covering variable costs and FPS fees).** These pricing points would likely allow cVRP to be competitive with debit and credit cards across a wide range of payment values. However, the delay in recovering most costs is likely to act as a much stronger disincentive for ASPSPs to invest in and promote cVRP.

Given this assessment, it is likely that an initial price point around 6-8p represents the best balance between the incentives of different participants of cVRP. It provides the potential for cVRP to be competitively priced against card payments with values over £50. It requires ASPSPs to incur initial costs but with the expectation that costs are recovered and the margin on cVRP to be at least broadly in line with the blend of substituted payments.

An initial price for Wave 1 will need to be determined, but the Operator will also need to make a decision as to how Wave 1 will be connected to later Waves. There are several possibilities that the Operator could consider:

- **Single commercial model.** The commercial model could apply one of the pricing options set out in this work for an initial period of time that covers all use cases.[67] This price would then be adjusted based on further work undertaken by UK Finance to set a long-term commercial model covering all Waves.
- **Two commercial models (transitional)**. The commercial model could apply one of the pricing options set out in this work for Wave 1 use cases. Separately a commercial model is designed and applied for later Waves (or the whole of cVRP). Two commercial models run concurrently for an initial adoption period and are eventually merged together.
- **Two commercial models (permanent).** The commercial model could be set for Wave 1 and a separate commercial model is established for later Waves. These separate commercial models are then maintained so long as there is a commercial model within the MLA.

The decision between these options and the point of any transition will likely turn on several factors that will influence the wider adoption of cVRP, including:

- **Economic considerations**. There may be reasons to differentiate between the Waves where there are differences in underlying economics or commercial dynamics. For example, if there are differences in costs there may be a reason to charge higher or lower prices between Waves. This may be the case where, for example, later Waves have higher risks that ASPSPs are expected to bear.
- **Commercial considerations**: Closely linked to economic considerations may be wider commercial issues that can influence adoption. For example, rapid changing of the initial commercial model may risk undermining confidence in cVRP as a new payment method among Billers.
- **Practical considerations**. There may be a range of practical issues that make it easier or harder to set separate commercial models. One set of issues is technical: the ability to reliably and easily differentiate between use cases to set different prices. Other practical issues include how the length of time for commercial contracts and how quickly and easily models can be transitioned.

Further industry feedback will be important for helping to shape this decision and its implementation.

UK Finance is currently working to develop a commercial model for later Waves. Regardless of the decision between one or two commercial models, there are areas we would expect a common approach to be adopted across the Waves, notably:

[67] As noted above, the pricing options could be adopted for the five years of the 'adoption period' but could be used for a shorter period of time.

- **The need for a commercial model to be set**. The need and value of having a commercial model for ASPSPs within the MLA is likely to be the same regardless of use case. The same inefficiencies and potential for an unlevel playing field will likely remain with later Waves and their use cases.
- **The need to consider the incentives across the market.** We have considered the incentives of Billers, ASPSPs and PISPs in our assessment of potential prices in a commercial model. We would expect that the UK Finance work, regardless of whether it starts with a cost based or value based approach to estimate prices, would need to cover the same considerations.
- **Charging PISPs**. In later use cases it will still be the case that PISPs have the potential to pass charges on to beneficiaries (Billers). The same dynamics will also be at play that make charging Payers likely to severely hinder the wider adoption of cVRP.

There are also important dependencies that will exist regardless of whether there is one commercial model or two. These will need to be factored into any further analysis by UK Finance and include:

- **Upfront investment costs may need to be factored into later Waves' pricing**. There are material upfront costs that are necessary for all Waves. If these costs are deferred and spread across all cVRP volumes then they may need to be factored into the assessment of pricing for later Waves (collectively or separately).
- **Volumes of later Waves will affect the scale of scheme fees**. Scheme costs per transaction are sensitive to the total volumes expected for cVRP. To the extent that UK Finance work provides more detailed assessments of later Wave volumes these will need to be factored into the potential scheme fees required for all Waves.

Finally, there are decisions around the commercial model that could diverge between Wave 1 and later Waves which may drive differences in pricing between two commercial models or may lead to a different price under a future single commercial model. These include:

- **The services provided by ASPSPs**. Wave 1 use cases are by definition low risk and such risks should largely be covered by existing industry or regulatory schemes. Later Waves will have higher risks and decisions are needed about the extent of customer protections and who in the ecosystem bears liability. This could be ASPSPs, in which case it forms an important 'service' they provide which may need to be factored into the price and fair return that they earn.
- **The pricing structure of the commercial model**. We recommend a fixed pence per transaction, a single price across use cases and no features such as tiering. This reflects a mixture of the nature of the use cases and their cost structure as well as what is pragmatically achievable for the initial rollout of Wave 1. These factors may be different for later Waves. If two commercial models are operated then there may be a divergence between them in pricing structure and pricing level. If only a single commercial model is operated then judgement will be required as to what structure will best suit the overall set of use cases for cVRP.

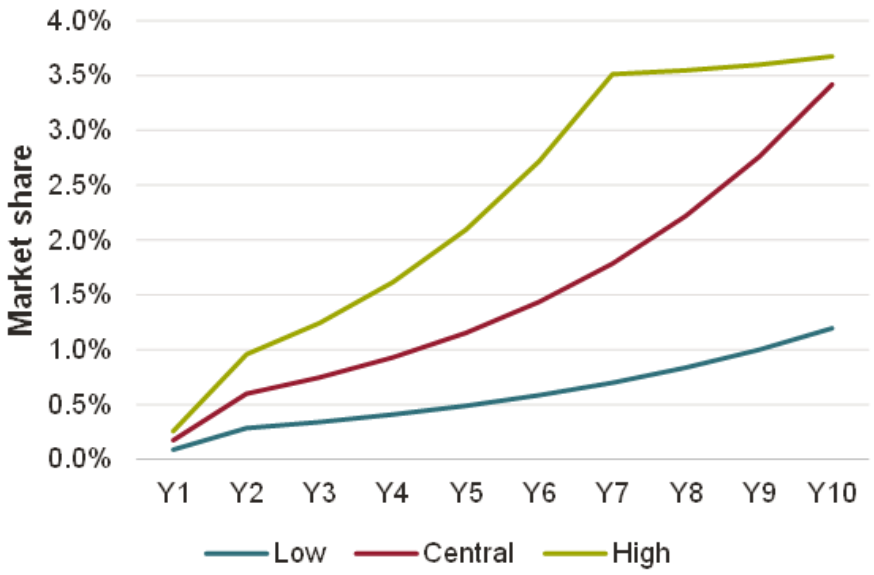
Annex A Projected volumes of cVRP across Wave 1 use cases

Annex A provides additional detail on the projected volumes for Wave 1 cVRP under low, central, and high scenarios. These scenarios are based on different assumptions about initial uptake and growth, which influence whether – and when – the cap on Wave 1 transactions originating from Direct Debits and credit cards on file is reached.

As outlined earlier in Section 10.2 of the main report, we modelled cVRP uptake across Wave 1 use cases. Section 10.2.1 summarised the assumptions regarding the potential addressable market and the maximum share of payments from Direct Debits and credit cards on file that could be captured[68].

Figure 6 below presents projected Wave 1 cVRP volumes as a share of the total market, across the three scenarios.

Figure 63 Projected Wave 1 cVRP volumes, as share of total market



Source: Frontier Economics

As shown, the growth rate in each scenario is initially high before tapering and stabilising after Year 2. The cap on credit card on file is not reached within the time horizon considered. However, the cap on Direct Debit is reached in Year 7 under the high scenario, and in Year 10 under the central scenario. This explains the discontinuity in the high scenario: once the Direct Debit cap is reached in Year 7, growth slows, drawing only from the remaining share of the addressable market attributable to card-based transactions.

68 The cap is 8% and 14% of the addressable market respectively for Direct Debits and credit cards.

Annex B Sensitivity analysis

This annex presents three sensitivity analyses designed to test the robustness of our modelling assumptions. The analyses focus on:

- the impact of different cost scenarios on the ASPSP fee;
- the impact of varying the discount rate applied to deferred costs; and
- the impact of merchant size on the competitiveness of cVRP relative to alternative payment methods.

Across these sensitivities, the estimated ASPSP fees and total fee to Billers remain broadly consistent with the central scenario. This lends credibility to our projected cVRP volumes for Wave 1. The exception is the high cost scenario, which results in significantly higher ASPSP fees. If such costs were to materialise, adoption in Wave 1 would likely require substantial delayed recovery of costs to allow cVRP to be priced competitively. While this would reduce short-term incentives for ASPSPs to invest, such investment could still be justified if higher fees were offered in future Waves, enabling cost recovery over a longer horizon.

B.1 Impact of different cost scenarios on the ASPSP fee

In Section 10.3 we considered the potential ASPSP fees under different repayment periods. The estimates provided in Table 27 reflect our central view of the costs incurred by ASPSPs in order to develop and run cVRPs. Tables 31 and 32 below replicate this analysis for the low and high cost scenarios.

- **Low cost scenario**. The ASPSP fees in the adoption period are approximately 2-3p lower than in the central scenario.
- **High cost scenario**. The ASPSP fees are considerably above the central estimates, and pricing is likely to make it difficult for cVRP to compete with existing payment options. Even with most costs deferred to a later period the ASPSP charge would be very significant, driven by high expected variable costs.

In practice we consider that the high cost scenario reflects an unlikely outcome driven by very high costs, including high variable costs in the form of significant queries and issues.

Table 3110 Low cost scenario – ASPSP fee options

Scenario	Description	Adoption period price (Year 1-5)	Recovery period price (Year 6-10)
1	**Recover all costs** in period 1	7p (6-12p)	4p (3-5p)
2	**Delay recovery** of **upfront investment costs** to period 2	6p (5-9p)	4p (3-6p)
3	Delay recovery of **upfront investment** and **ongoing fixed costs** to period 2	5p (4-7p)	4p (4-7p)
4	Delay recovery of **upfront and scheme fee costs** to period 2	4p (4-6p)	5p (4-7p)
5	Delay recovery of **upfront, scheme fee** and **ongoing fixed costs** to period 2	3p (3-3p)	5p (4-8p)
6	Delay recovery of **upfront, scheme fee**, **ongoing fixed costs** and **margin** to period 2	2p (2-2p)	5p (4-9p)

Source: Frontier analysis.
Note: Results presented to the nearest pence. The price ranges in each row refer to the low and high volume scenarios.

Table 3211 High cost scenario – ASPSP fee options

Scenario		Adoption period price (Year 1-5)	Recovery period price (Year 6-10)
1	**Recover all costs** in period 1	40p (36-48p)	31p (31-33p)
2	**Delay recovery** of **upfront investment costs** to period 2	35p (33-39p)	33p (31-36p)
3	Delay recovery of **upfront investment** and **ongoing fixed costs** to period 2	32p (31-34p)	34p (32-38p)
4	Delay recovery of **upfront and scheme fee costs** to period 2	33p (32-36p)	33p (32-37p)
5	Delay recovery of **upfront, scheme fee** and **ongoing fixed costs** to period 2	30p (30-31p)	34p (33-39p)
6	Delay recovery of **upfront, scheme fee**, **ongoing fixed costs** and **margin** to period 2	27p (27-27p)	35p (34-41p)

Source: Frontier analysis.

Note: Results presented to the nearest pence. The price ranges in each row refer to the low and high volume scenarios.

B.2 Impact of the discount factor on the ASPSP fee

The options of ASPSP fees listed in section 10.3 are calculated based on whether the repayment of some costs is deferred to the recovery period. Whenever a cost is deferred, an interest is applied on its repayment. This is to compensate for the cost of capital required to fund these losses. As described in section 10.1.4, we have calculated such interest based on a central weighted-average cost of capital (WACC) estimate of 5%[69]. In our model, interest is applied to both deferred costs and any annual losses, with ASPSPs earning interest on any negative net balance carried forward.

Tables 33 and 34 below show how the ASPSP fees change based on the value of the discount factor. We take a central view of costs and volumes, and calculate the fees based on a low (2.5%) and high (7.5%) value of the WACC.

The results show that the WACC has a very limited effect on the ASPSP fees, which are almost unchanged compared to the central scenario. This holds particularly in the adoption period, where any minor differences are driven only by the interest earned on temporary losses in the net balance.

Table 3312 Low WACC (2.5%) scenario – ASPSP fee options

Scenario	Description	Adoption period price (Year 1-5)	Recovery period price (Year 6-10)
1	**Recover all costs** in period 1	11p	5p
2	**Delay recovery** of **upfront investment costs** to period 2	8p	6p
3	Delay recovery of **upfront investment** and **ongoing fixed costs** to period 2	6p	6p
4	Delay recovery of **upfront and scheme fee costs** to period 2	6p	6p
5	Delay recovery of **upfront, scheme fee** and **ongoing fixed costs** to period 2	4p	7p
6	Delay recovery of **upfront, scheme fee**, **ongoing fixed costs** and **margin** to period 2	3p	7p

69 As specified in note 53, this is based on the costs of capital of regional banks taken from "Cost of Capital by Industry Sector – Europe" here Data for current year.

Source: Frontier analysis.

Table 3413 High WACC (7.5%) scenario – ASPSP fee options

Scenario	Description	Adoption period price (Year 1-5)	Recovery period price (Year 6-10)
1	**Recover all costs** in period 1	11p	5p
2	**Delay recovery** of **upfront investment costs** to period 2	8p	6p
3	Delay recovery of **upfront investment** and **ongoing fixed costs** to period 2	6p	7p
4	Delay recovery of **upfront and scheme fee costs** to period 2	6p	7p
5	Delay recovery of **upfront, scheme fee** and **ongoing fixed costs** to period 2	4p	7p
6	Delay recovery of **upfront, scheme fee**, **ongoing fixed costs** and **margin** to period 2	3p	8p

Source: Frontier analysis.

B.3 Impact of different merchant sizes on the competitiveness of cVRP against alternative payment methods

Section 10.4 assessed the competitiveness of cVRP for **large Billers** by comparing the total fee (including ASPSP, PISP, and Receiving Bank charges) with the costs of alternative payment methods such as Direct Debit and card payments. The focus on large Billers reflects the assumption that they are the most likely early adopters in Wave 1. Our findings suggest that, for large Billers, deferred cost recovery scenarios make cVRP competitive with debit cards for transactions in the range of £50-£75 or more.

This section extends the analysis to **medium-sized and small Billers**, where certain components of the total cVRP fee are assumed to vary:

- The ASPSP fee remains constant for all merchant sizes.
- The PISP charge is likely to vary by merchant size. We assume that the fee imposed on large billers (10p) increases to 15p for medium-sized Billers and 20p for small ones.
- The Receiving ASPSP fee is assumed to be 2p for large Billers in our main scenario, and increases to 10p for medium-sized Billers and 20p for small ones.

Tables 35 and 36 compare the total cVRP fee to medium-sized and small Billers against the charges imposed by competing payment methods. The results show that cVRP is significantly more competitive for medium-sized and small Billers than for large ones:

- For **medium-sized Billers**, cVRP becomes more convenient than debit cards for transaction above £3-£13, depending on the scenario; and
- For **small Billers**, cVRP becomes more cost-effective than debit cards for transaction above £22-£27, and more competitive than Direct Debit for transaction above £23-£33, depending on the scenario.

These findings suggest two key implications for future Waves of cVRP:

- PISPs and receiving ASPSPs may be able to achieve higher margins with medium and small Billers, which could strengthen their incentives to support cVRP as adoption expands; and
- there may be scope (if necessary) for the ASPSP margin to be increased in future Waves, particularly if smaller Billers are expected to contribute more significantly to cVRP transaction volumes.

Table 35 Total fee to medium-sized Billers under different scenarios for cVRP vs. alternative payment methods

	Proportion of total biller fee over transaction value				
Period 1 total fee to Billers	**£10**	**£50**	**£75**	**£100**	**£500**
Scenario 1 – 36p	3.60%	0.72%	0.48%	0.36%	0.07%
Scenario 2 – 33p	3.30%	0.66%	0.44%	0.33%	0.07%
Scenario 3&4 – 31p	3.10%	0.62%	0.41%	0.31%	0.06%
Scenario 5 – 29p	2.90%	0.58%	0.39%	0.29%	0.06%
Scenario 6 – 28p	2.80%	0.56%	0.37%	0.28%	0.06%
Alternative payments	£10	£50	£75	£100	£500
Direct debit – 10p	1.00%	0.20%	0.13%	0.10%	0.02%
Debit cards – 1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Credit cards – 1.25%	1.25%	1.25%	1.25%	1.25%	1.25%

Source: Frontier Economics.

Note: Cells in red refer to fees above credit cards, cells in green contain values below debit card fees.

Table 36 Total fee to small Billers under different scenarios for cVRP vs. alternative payment methods

	Proportion of total biller fee over transaction value				
Period 1 total fee to Billers	**£10**	**£50**	**£75**	**£100**	**£500**
Scenario 1 – 51p	5.10%	1.02%	0.68%	0.51%	0.10%
Scenario 2 – 48p	4.80%	0.96%	0.64%	0.48%	0.10%
Scenario 3&4 – 46p	4.60%	0.92%	0.61%	0.46%	0.09%
Scenario 5 – 44p	4.40%	0.88%	0.59%	0.44%	0.09%
Scenario 6 – 43p	4.30%	0.86%	0.57%	0.43%	0.09%
Alternative payments	£10	£50	£75	£100	£500
Direct debit – 20p + 1%	3.00%	1.40%	1.27%	1.20%	1.04%
Debit cards – 2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Credit cards – 2.50%	2.50%	2.50%	2.50%	2.50%	2.50%

Source: Frontier Economics.
Note: Cells in red refer to fees above credit cards, cells in green contain values below direct debit fees.