

Wholesale Distribution
Steering Group (WDSG)
Consultation Paper

Consultation on the Future of the UK's Wholesale Cash Distribution Model

24 June 2020

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Foreword

Cash is an important means of payment for many UK consumers and businesses. Over two million people rely on cash to make the majority of their everyday payments, and many more choose to use cash for some transactions. But payment preferences are changing. As more people turn to digital payments, the cash market needs to evolve in order to continue to support access to cash for those who want to use it.

The wholesale cash market is an important part of the UK's cash infrastructure. It sits between the Bank of England issuing new notes and those notes being sent to individual bank branches, Post Offices, ATMs and retailers. But the system we have in place today was designed at a time when cash usage was much higher. Declining cash volumes mean that we are starting to see excess capacity in the system, which is inefficient. Over time this is likely to lead to increased cash processing costs, and potentially a less resilient system.

The Bank of England established the Wholesale Distribution Steering Group (WDSG) just over a year ago to oversee the work of industry to design a new model for the wholesale distribution of cash in the UK. The objective of the new model is to be effective, resilient and sustainable in a society with reducing cash usage. Industry analysis has looked at how different potential future models would meet these objectives. That analysis suggests that the creation of a single utility entity to manage a consolidated network of cash centres for wholesale cash distribution would best meet the WDSG's criteria.

The wholesale cash market is, however, just one part of the UK's overall cash landscape. Prior to any decisions being taken on the future model for this market, the WDSG felt it was important to share the results of the analysis that had been undertaken, and understand the views of other cash market participants and interested parties. In particular we are keen to understand the broader impact of moving in the direction of the utility model suggested by the analysis, and if there are additional factors relevant to such a decision that we should be aware of.

The analysis presented in this paper was undertaken prior to the Covid-19 lockdown in the UK, which has resulted in a well-reported reduction in the use of cash for transactions. Some of this fall in cash usage is likely to be temporary, but some may persist, accelerating the trend to digital payments that was already in train. While we do not yet know what the final impact will be, the WDSG agrees that a further acceleration in cash decline is likely to strengthen the case for moving to a more consolidated model of wholesale cash distribution.

By undertaking this work now, and putting forward options for a new model for wholesale cash distribution in the UK, the WDSG is looking to ensure that cash processing costs remain low, and the sector remains resilient and sustainable. This will be an important step to enable the public to continue to use the notes and coins they want to, even as cash usage declines.

Sarah John
Chair of WDSG,
Chief Cashier, Bank of England

How to respond to this consultation

- i. By responding to this consultation, you are providing personal data to the Bank of England in its capacity as chair of the Wholesale Distribution Steering Group (WDSG). This may include your name, contact details (including, if provided, details of the organisation you work for), and opinions or details offered in the response itself.
- ii. Responses will be shared with the WDSG on an anonymised basis and, to the extent possible, suitably aggregated form. If data cannot be suitably anonymised and aggregated it will not be shared with WDSG. Please can all respondents state clearly, where information provided should be treated as confidential and/or commercially sensitive and therefore should not be shared with the WDSG or published.
- iii. The Bank reserves the right to share the full version of responses to the consultation with other regulatory authorities involved in future of cash related workstreams.
- iv. The responses received will be assessed to inform our work as a regulator and central bank and the chair of the WDSG, both in the public interest and in the exercise of our official authority. We may use your details to contact you to clarify any aspects of your response.
- v. The Bank welcomes responses from all cash centre operators, cash-in-transit service providers, cash intensive businesses including retailers, independent ATM deployers and financial institutions. Responses should reflect the organisation's view, as a whole, and should have gone through each organisations' appropriate governance processes.
- vi. Information provided in response to this consultation, including personal information, may be subject to publication or disclosure to other parties in accordance with access to information regimes including under the Freedom of Information Act 2000 or data protection legislation, or as otherwise required by law or in discharge of the Bank's functions.
- vii. Please indicate if you regard all, or some of, the information you provide as confidential. If the Bank of England receives a request for disclosure of this information, we will take your indication(s) into account, but cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system on emails will not, of itself, be regarded as binding on the Bank of England.
- viii. Responses to the consultation should be provided in writing to the Bank by 24/08/2020, with all communications to: WDSG@bankofengland.co.uk.

1 Executive summary

1 In 2017, debit cards overtook cash as the most common method of payment in the UK. The number of cash transactions in the UK has decreased sharply in recent years from 21.4bn cash transactions in 2009 to c.9.3bn transactions in 2019.¹ While the use of cash for transactions continues to fall, cash continues to play a vital role for many in the UK. In 2019, 2.1mn people mainly used cash, choosing this payment method when doing their day-to-day spending.² For these consumers, as well as those who choose to use cash for some of their spending, maintaining access to cash is important to support choice in the way that people pay for goods and services.

2 Effective, resilient and sustainable wholesale distribution of cash is critical to support access to cash, and enables the public to obtain and use the notes and coins they want, when they want. The current wholesale cash distribution system involves:

- the Bank of England (the Bank) - which issues Bank of England banknotes (BoE banknotes);
- the Royal Mint – who supply UK coins on behalf of HM Treasury (HMT);
- major cash centre operators, including members of the Bank of England Note Circulation Scheme³ (NCS) - who take delivery of banknotes from the Bank and coins from the Royal Mint when needed and move to large processing centres around the country;
- underwriting banks - who support the NCS members buying and selling notes and coins; and
- commercial banknote issuers in Scotland and Northern Ireland (S&NI) – who issue banknotes under the Scottish and Northern Ireland banknotes (S&NI banknotes) regime.

3 The current wholesale system evolved in a world with much higher cash usage than the UK has today, or is likely in future. Based on the experience of other countries,⁴ reductions in cash usage in the UK are likely to continue. This will lead to increasing overcapacity in the distribution network, and the risk of disruption to overall cash supply as individual operators take decisions on how best to adapt their business model and footprint. Therefore, to avoid risks of disruption in access to cash for consumers and businesses, early intervention is required while infrastructure still exists and can be adapted to meet future needs.

4 In May 2019, the Bank convened the Wholesale Distribution Steering Group⁵ (WDSG) to oversee the work of the industry to design a new model for the wholesale distribution of cash in the UK. The objective of the WDSG is to identify a potential, viable new model that is effective, resilient and sustainable, and which can be delivered to support continued access to cash.

5 UK Finance commissioned KPMG for and on behalf of their Industry Steering Group⁶ (ISG) members to provide a detailed independent third party industry analysis for consultation on the proposed future supply chain

¹ UK Finance, UK Payment Markets Report 2020.

² UK Finance, UK Payment Markets Report 2020.

³ The NCS governs the distribution, processing and storage of BoE banknotes. It provides a framework for the wholesale commercial cash industry, which helps encourage efficiencies in their banknote operations. Legal agreements and contractual rules underpin how the NCS operates.

⁴ See Annex 2 for other international models used to mitigate the decline in cash usage.

⁵ WDSG membership consists of the organisations that currently underwrite the wholesale cash supply chain in the UK – Barclays, CYBG, HSBC, Lloyds, Post Office, RBS and Santander. Membership also includes the Northern Ireland banknote issuers as observers and HMT as issuer of UK coin, also attends as an observer.

⁶ ISG membership consists of Barclays, CYBG, HSBC, Lloyds, Post Office, RBS and Santander. Membership also includes the Bank, HMT, G4S, the Royal Mint and Vaultex as observers.

model and transition to it. The independent industry analysis recommended a single model including the assessment of multiple models against an agreed set of WDSG success criteria. WDSG is putting out a utility model, based on the independent industry analysis, for wider consultation. As WDSG is an advisory group with no decision making powers, in line with the Terms of Reference of the WDSG, each participating entity will be responsible for its own commercial decisions about its future commercial strategy.

6 The independent industry analysis considered a utility model under which a new utility would own the entire wholesale cash centre processing and storage⁷ infrastructure. The analysis suggested that such a model would:

- allow for a centrally managed rationalisation of wholesale cash centres, removing duplication, reducing fixed costs and increasing capacity utilisation across the wholesale supply of cash;
- enable demand for cash to be met efficiently, cost effectively and comprehensively across all regions compared to the alternative scenarios, with a more holistic cash centre rationalisation programme resulting in lower processing costs per unit (CPU), and lower management costs;
- ensure the wholesale supply chain remains secure and resilient and can survive plausible market shocks. Under a utility, there is a lower risk of disorderly rationalisation or unexpected exits of industry participants, which results in increased resilience; and
- support the role of cash as a viable contingency for other payment methods in reasonable circumstances. Under a utility, there would be a system-wide view of demand, which would allow for system-wide decisions while maintaining sufficient spare capacity across the network to respond to sudden increases in demand.

7 Independent industry analysis suggests that this model is more financially sustainable than the alternatives, such that the utility generates better outcomes compared to a number of alternative scenarios, including a material (ie, greater than 50%) reduction in annual industry costs in 2031, compared to 2018 costs. This should, in turn, help to keep down end-user costs for cash processing.

8 Independent industry analysis suggests that a utility model can support access to cash for the medium-to-long term. The purpose of this consultation is to seek feedback on the proposed utility model and its design parameter and to seek views on alternative and/or additional proposals and considerations that should be taken into account and examined on the matter of wholesale cash access and distribution.

9 Section 2 provides the background and context to the publication of this consultation. Section 3 outlines the key players in the wholesale cash lifecycle. Section 4 discusses the challenges in the wholesale cash supply chain. Sections 5 and 6 look in detail at the proposed model being put forward based on the independent industry analysis. Sections 7 and 8 consider other areas of consideration and provide a high-level discussion on next steps. Section 9 sets out the key questions being consulted on.

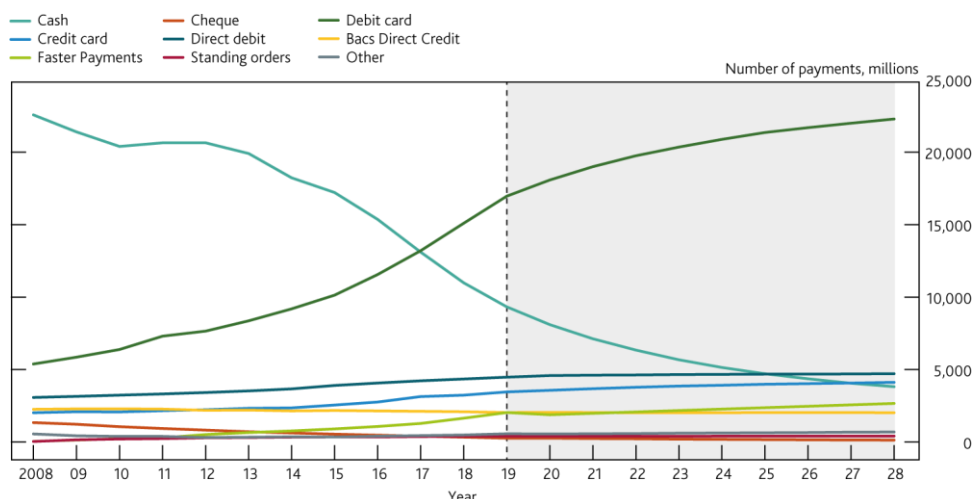
⁷ Temporary external storage sites during times of peak volume for UK coin are not in scope.

2 Background

2.1 Cash demand in the UK

10 Cash has historically been a popular method of consumer payment and was used for the majority of consumer payments up until 2017. In recent years, the volume of cash transactions has declined markedly, as many consumers move towards other means of payment. Chart 1 shows how the volume of cash transactions fell by over 50% between 2009 and 2019 (from 21.4bn transactions to 9.3bn transactions). Over the same period, the volume of card transactions increased significantly, more than doubling between 2009 and 2019. Debit cards overtook cash as the most common method of payment in 2017.

Chart 1 Consumer payment volumes (mn) 2008-28



Source: UK Finance, 2019 and 2020 UK Payment Markets Report.

Notes: 2008–19 historic data is taken from the Payment Markets Report published in 2020; the 2020–28 forecast data is taken from the Payment Markets Report published in 2019. UK Finance did not provide forecast data in its 2020 report and the forecast data has not been updated to reflect any potential impact of the Covid-19 pandemic.

11 As Chart 1 illustrates, the number and proportion of cash transactions is expected to continue to decline in the coming years. While there is uncertainty around the exact number or proportion of cash transactions that will be undertaken in the future, it is nevertheless likely that the broad trend will continue.

12 In spite of this trend, respondents to the Government’s 2018 Call for Evidence⁸ highlighted that while they were keen for the Government to continue supporting digital payments, they also stressed the importance of cash in many people’s daily lives.⁹ Cash continues to play a key role for many, and crucial role for some; in 2019, 2.1mn people mainly used cash for their day-to-day spending.¹⁰ Many more choose to use cash for a range of reasons including it being a useful budgeting tool; a symbol of independence; it is quick and easy to use; and because it works when other methods do not.

⁸ In the Spring Statement 2018, the Government launched a [Call for Evidence on Cash and Digital Payments in the New Economy](#), following previous work to encourage reform of the wholesale cash industry. The Call for Evidence sought to gather evidence on how changing preferences for cash and digital payments impact on different sectors, regions and demographics.

⁹ Call for Evidence published [responses](#).

¹⁰ UK Finance, UK Payment Markets Report 2020.

Access to Cash Review

13 In March 2019, the independent [Access to Cash Review](#) (the ACR) was published and further highlighted that the UK is not ready to become a cashless society. The review reported that cash is an economic necessity for c.25mn people and that 17% of the UK population – over 8mn adults – would struggle in a cashless society. The ACR made five recommendations, which work together to keep cash viable for the foreseeable future.¹¹

14 As well as looking to guarantee consumer access to cash and preserving consumers' ability to pay for goods and services in cash, the ACR noted that the wholesale cash infrastructure also has a part to play in ensuring these important rights for the end-user remain. The third recommendation in the report called for 'radical change to the wholesale cash infrastructure, moving from a commercial model to more of a 'utility' approach, which will keep cash sustainable for longer'.

2.2 Wholesale cash distribution

15 The wholesale distribution system is a key part of the cash cycle that enables the public to obtain and use the notes and coins they need, when they need them. It sits between the Bank and commercial issuers issuing new banknotes and those notes being sent to individual bank branches, ATMs and retailers. The Bank is responsible for issuing banknotes, and withdrawing them at the end of their life; but the cash management functions related to the wholesale recirculation and redistribution of those notes to the private and public sector during their lifetime occurs in the wholesale cash supply chain within the private sector. The same applies in relation to the distribution of S&NI banknotes and for UK coin. The wholesale system includes:

- taking delivery of new notes and coin from the Bank, commercial issuers in S&NI and the Royal Mint;
- the wholesale sorting, storing and circulation of these notes and coins, including the movement between cash centres; and
- the withdrawal of notes and coin that are no longer fit for circulation from the system, to be destroyed.

2.3 Industry working groups

Future Cash Supply Chain Working Group

16 In parallel to the ACR, UK Finance and several of the organisations that are participants in the wholesale cash supply chain in the UK¹² formed the Future Cash Supply Chain Working Group (the FCSCWG) to identify possible options for a 'future state' cash supply chain model in Great Britain, taking into account the projected fall in cash usage. The group explored a future model which would protect existing customer requirements and create a secure, resilient, and cost effective model fit for the future; thus ensuring that cash remained one of a suite of payment options for consumers and businesses that wished to continue to use cash (the Phase 1 review).

17 The Phase 1 review (completed in 2019) found that the wholesale cash supply chain was characterised by significant spare capacity, duplication and rising costs. Furthermore, Phase 1 found that the supply chain was fragmented, with varying operational forms, and limited ability to use spare capacity across operators. The FCSCWG considered that this constrained the ability of the wholesale cash supply chain to effectively respond to the changing demand for cash. Phase 1's main recommendation was for the industry to consider opportunities to

¹¹ See Annex 1 for all ACR recommendations.

¹² Barclays, Clydesdale and Yorkshire Bank (now rebranded Virgin Money), HSBC, Lloyds, NatWest, Santander and the Post Office.

rationalise the wholesale cash supply chain, through a more detailed phase of business case analysis with broader industry input. This aligned with the findings of the ACR and its third recommendation.

Wholesale Distribution Steering Group

18 Following the publication of the ACR, the Bank convened the WDSG¹³ to oversee the work of the industry to consider a new model for the wholesale distribution of cash in the UK. The WDSG, chaired by the Bank's Chief Cashier, has met regularly since its first meeting in May 2019.¹⁴ WDSG membership consists of the organisations that currently participate in the wholesale cash supply chain in the UK, including the Northern Ireland banknote issuers as observers. HMT, as issuer of UK coin, also attends as an observer.

19 As chair of WDSG, the Bank has provided WDSG with advice, support, challenge and momentum throughout the design process with a view to ultimately ensuring that any proposed new model is consistent with the Bank's own objectives. The Bank is committed to supporting its mission of promoting the good of the people of the United Kingdom by maintaining monetary and financial stability through promoting confidence in the currency. In England and Wales, the Bank is the sole issuer of banknotes, and has an objective to maintain the availability, quality and authenticity of BoE banknotes.

20 The overall aim of the WDSG is to put forward a new model for wholesale cash distribution that is effective, resilient, sustainable and deliverable, thus supporting continued access to cash. These four high level objectives are further underpinned by 17 success criteria, which the WDSG agreed as the basis on which potential models would be assessed (see Figure 1).

21 WDSG invited the ISG, convened by UK Finance, to bring forward end state model proposals to WDSG for consideration. UK Finance appointed KPMG as an independent consultant to take forward the design, assessment and recommendation of a single model for the future wholesale cash supply chain, which forms Phase 2 of this programme of work.¹⁵ In bringing industry participants together, both ISG and WDSG members have reviewed and considered the outcomes of the independent industry analysis and assessment of potential models.

22 A proposed model, based on this independent industry analysis, is detailed in sections 5 and 6. WDSG are now seeking the views on this model from all interested parties, and particularly those organisations who rely on, or provide services to, the wholesale cash distribution system in order to allow this programme of work to further progress.

23 In line with the Terms of Reference of the WDSG, each participant will remain responsible for its own commercial decisions.

¹³ See WDSG [Terms of Reference](#).

¹⁴ [Minutes](#) are published on the Bank's website.

¹⁵ The Bank has not had oversight of the work carried out by KPMG, nor validated the assessment or assumptions used.

Figure 1 WDSG success criteria

Effective	<ul style="list-style-type: none"> the end state model should enable demand for cash to be met efficiently, cost effectively and comprehensively across all regions; the end state model should maintain or improve the quality and authenticity of banknotes in circulation; the end state model will facilitate the authentication standards for coin at levels to be agreed between HMT (via the Royal Mint) and the industry; and the end state model will support the development of enhanced cash services available to users of cash (consumers and businesses).
Resilient	<ul style="list-style-type: none"> the end state model is secure and resilient and can survive plausible market shocks; the end state model is conducive to effective oversight to maintain resilience; and the end state model supports the role of cash as a viable contingency for other payment methods in reasonable circumstances.
Sustainable	<ul style="list-style-type: none"> the design process should take into account user interests with the aim to achieve general support from the wider cash stakeholder community; the proposed design should be underpinned by a positive business case over the medium term; the end state model complies with UK law and regulations; the end state model is efficient and cost effective against the background of reducing transactional volumes; the end state model must be able to demonstrate that it will not result in any substantial lessening of competition and innovation at appropriate points in the distribution chain, while maintaining or enhancing access to cash services; the end state model is flexible and capable of supporting a range of future cash transaction volume and value scenarios; and the end state model minimises the environmental impact of wholesale distribution of cash.
Deliverable	<ul style="list-style-type: none"> the model can be practically delivered within available capacity and capabilities (ie, suppliers, skills and infrastructure); the transition and deliverability risks are acceptable and can be appropriately managed and/ or mitigated; and once implemented, the model is likely to deliver the outcomes desired by stakeholders from the wholesale cash supply chain.

2.4 Joint Authorities Cash Strategy (JACS) Group

24 As part of the Government’s response to its Call for Evidence and the ACR, it announced that HMT would create and chair the JACS Group. While acknowledging the UK already has experienced and well-established financial regulators, this HMT led group brings together the Bank, the Payments Systems Regulator (the PSR) and the Financial Conduct Authority (the FCA) to ensure comprehensive oversight of the overall cash infrastructure across the UK.

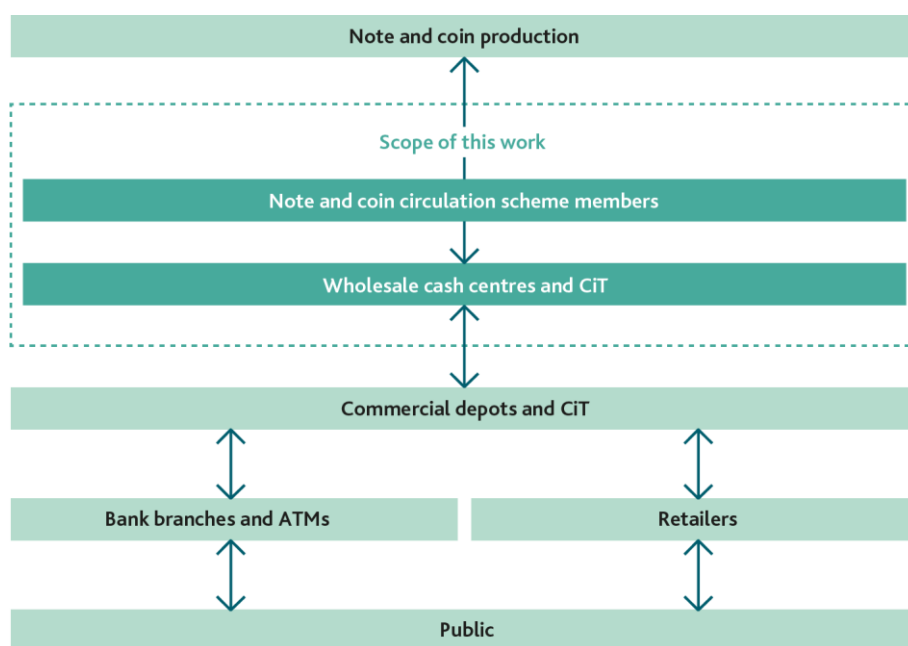
25 This collaborative forum allows for the co-ordination of actions taken by individual regulators regarding the cash system, including:

- monitoring and evaluating the resilience and cost effectiveness of the UK’s wholesale cash infrastructure;
- supporting appropriate cash withdrawal and deposit services to consumers and businesses;

- ensuring the effects of regulatory activities are evaluated across the full end-to-end cash system; and
- formulating an integrated workplan of members' activities with respect to cash.

2.5 Scope of consultation

Figure 2 Scope of consultation paper



26 This consultation paper considers the wholesale cash infrastructure in the UK, also known as the wholesale cash supply chain. More specifically, the following activities have been considered part of the wholesale cash supply chain:

- Delivery of new notes and coins – notes issued by the Bank, by the Scottish and Northern Ireland issuing banks and coins by the Royal Mint.
- Access to the NCS - the contractual relationship, rules, reporting and other obligations necessary for participation in the Bank of England's NCS that includes access to the Bank's balance sheet for the purpose of storing, sorting and circulating BoE Banknotes.
- Ownership of infrastructure - the ownership of the infrastructure necessary for the wholesale storing, sorting and circulating BoE banknotes, S&NI banknotes, and UK coin. This infrastructure includes but is not limited to secure cash centres, note and coin sorting equipment, associated systems and software.
- Operation of infrastructure - the entity that operates the infrastructure necessary for the wholesale storing, sorting and circulating BoE banknotes, S&NI banknotes and UK coin.
- Wholesale cash in transit (CiT) - movements of notes and coins between wholesale cash centres. This also includes cash movements from/to the Bank, the S&NI issuers, the Royal Mint and De La Rue.¹⁶

¹⁶ De La Rue prints BoE banknotes under licence from the Bank.

27 The independent industry analysis presented in this consultation paper considers changes and impacts on the use of cash over a 12 year window beginning in 2020. A 12 year window was chosen for the industry analysis as it assumes an initial two-year transition period from the current industry structure to a new model for wholesale cash supply, followed by a ten-year period of assessment of that new model and its impact.

28 This consultation does not cover:

- how end consumers access cash, eg, through ATMs and bank branches;
- the ability for consumers to pay for goods and services with cash; and
- how cash is transported outside of the wholesale system ie, how cash is moved between banks and their branches and ATMs.

3 The wholesale cash industry

3.1 The wholesale cash lifecycle

29 The wholesale cash lifecycle begins with banknote and coin production. De La Rue prints BoE banknotes, while banks in Scotland¹⁷ and in Northern Ireland¹⁸ are authorised to issue S&NI banknotes, which are printed by a commercial printer. The Royal Mint is responsible for production of coins under instruction of HMT.

Bank of England responsibilities

30 The Bank is neutral on methods of payment and therefore does not seek to promote any payment method above any other, but does believe it is important that the public have a choice. The Bank therefore seeks to meet, rather than determine, demand for its banknotes.

31 In terms of managing UK banknote issuance, there are two aspects to maintaining confidence in the currency. First, there needs to be confidence in the physical integrity of banknotes. There are many ways through which the Bank seeks to achieve this, including the periodic upgrading of designs with the latest security features; the procurement of good-quality notes; providing information to the public and retailers on how to check that notes are genuine; and co-operation with law enforcement authorities to combat counterfeiting activity. Second, there needs to be confidence in the availability of banknotes; and to achieve this the Bank facilitates a sufficient quantity of notes reaching the public, with an appropriate balance of denominations.

32 The Bank's role is limited to issuing new banknotes, destroying unfit banknotes that are no longer fit for circulation, and withdrawing banknotes when a new series is launched.

33 As stated above, a number of commercial banks in Scotland and Northern Ireland are authorised to issue S&NI banknotes. These banks are, by law, required to set aside assets, with the value reported to the Bank on a daily basis, that are worth at least the value of all of the banknotes they have in circulation.¹⁹ The Bank is responsible for regulating the holding and issuance of S&NI banknotes to promote the protection of noteholders.²⁰ This ensures that people with genuine S&NI banknotes receive a level of protection against insolvency equivalent to people who have genuine BoE banknotes.

Notes Circulation Scheme members' responsibilities

34 The Notes Circulation Scheme (NCS or Scheme) governs the custody of BoE banknotes that are in issue. The Scheme allows much of the processing and distribution of notes, which in other cash distribution models is performed by the central bank, to be carried out instead by approved commercial organisations. In order to make this economically viable, the Scheme allows its members to hold certain classes of notes in custody on behalf of

¹⁷ Commercial banks in Scotland which issue Scottish banknotes: Bank of Scotland plc, Clydesdale Bank plc, The Royal Bank of Scotland plc.

¹⁸ Commercial banks in Northern Ireland which issue Northern Irish banknotes: Bank of Ireland (UK) plc, Northern Bank Limited (which trades as Danske Bank), Ulster Bank Limited and AIB Group (UK) plc (which trades as First Trust Bank in Northern Ireland; First Trust Bank, will cease issuing its own notes on 30 June 2020 and removed from circulation on 30 June 2022).

¹⁹ [The Bank of England's approach to regulating Scottish and Northern Ireland commercial banknotes, March 2017.](#)

²⁰ The Bank regulates this activity under Part 6 of the Banking Act 2009.

the Bank within their cash centres. Members therefore avoid facing the funding cost of the face value of the notes handled, which would otherwise make it prohibitively expensive to undertake wholesale processing of notes.²¹

35 There are five banks in the UK that support the NCS members: National Westminster Bank plc (NatWest); Barclays Bank UK plc (Barclays) and HSBC UK Bank plc (HSBC), which support Vaultex UK (Vaultex) in buying and selling notes; and Lloyds Bank plc (Lloyds) and Santander UK plc (Santander), which support G4S. The Post Office is also an NCS member.

36 NCS members purchase banknotes from the Bank when needed and they are, in turn, purchased by customers of the underwriting entity. These include ATM operators; financial institutions; retailers and other businesses. The Post Office also provides cash to meet the needs of its network of Post Offices across the UK. Cash is transported between NCS centres and public facing services through CiT companies, which are licenced under the [Private Security Industry Act 2001](#).

37 Once BoE banknotes are bought from the Bank, they are classed as 'in circulation' and are free to move around public facing services and on to the public. When public facing services wish to deposit cash, they sell the cash back to the NCS members, again transporting the cash via CiTs. Once the cash is back with the NCS member, the cash is checked for authenticity and monitored for quality, with suspect or unfit banknotes sent back to the Bank and fit banknotes allowed to go back into circulation.

38 NCS members have a total of 21 cash centres across the UK; 12 of these sites process both notes and coins, while nine sites are notes only centres.²²

Scottish and Northern Ireland members' responsibilities

39 In Scotland and Northern Ireland, when there is demand for new banknotes, the commercial banknote issuers put these into circulation. S&NI banknotes are issued into circulation from cash centres in Edinburgh, Glasgow and Belfast to meet direct customer demand through the issuer's branch and ATM network. As with the NCS, S&NI banknotes are also bought directly by public facing services within the region and circulate in the same way as BoE banknotes. There are a total of five cash centres across S&NI; three of these sites process both notes and coin, while two are notes only cash centres.

HMT and the Royal Mint

40 Coin distribution operates differently from banknotes in the UK. To deal with fluctuations in financial institutions' coin holdings those that hold surplus coin sell to those with a deficit of coin. This is done through a weekly trading arrangement. When the institutions forecast that there will be insufficient overall coin of any particular denomination to satisfy demand, they order new coin from the Mint. This coin is issued by the Royal Mint on behalf of HMT who are the issuing authority for coin.

41 Wholesale cash processors have coin sorting machines that can identify counterfeit coins. The Royal Mint continues to work with financial institutions to tackle the threat of counterfeits and is creating and implementing a coin checking and validation framework to ensure a consistent approach across the whole of the industry.

42 Half of the cash centres in the UK process both notes and coin, while RBS and Vaultex operate two coin-only cash centres each and G4S operates one further coin only cash centre.

²¹ In effect members receive off-balance sheet treatment for some of the notes in their physical possession. The rules of the NCS are aimed at promoting efficiency in the distribution and processing of notes in a way that meets the reasonable demands of cash users. The NCS rules also hold NCS members to operational and risk management standards.

²² Across the UK there are 31 cash centres, five coin-only centres are classified as neither NCS nor S&NI.

3.2 The different operating, ownership and funding models

43 The current wholesale cash supply chain features a number of different ownership and operational models, with some underwriters insourcing cash centre operations, while other underwriters outsource their operations via a contractual relationship with a commercial cash centre operator. This diversity of operational models is seen across the NCS, S&NI banknote issuers, and coin distribution.

44 To illustrate this point through an example, there are four different business models within the NCS, including direct delivery and commercially outsourced models and these are set out briefly below:

- NatWest owns and operates its own cash centre facilities and procures CiT services from third parties.
- Vaultex is a joint venture providing services exclusively to Barclays and HSBC and their customers. Vaultex owns and operates its cash centres and procures wholesale CiT services from third parties.
- Lloyds and Santander have outsourced cash centre ownership and operations to G4S and these commercial contracts also provide wholesale CiT services. Each bank also independently sources CiT services to their branches and ATMs from G4S.
- Only the Post Office owns and operates its own cash centres and has vertically integrated CiT services.

Figure 3 Complexity of different operating, ownership and funding models in the NCS

	Barclays	HSBC	LBG	Post Office	RBS/ NatWest	Santander
Ownership and operation of infrastructure	Vaultex	Vaultex	G4S	Post Office	NatWest	G4S
Wholesale cash in transit	Vaultex procure wholesale CiT	Vaultex procure wholesale CiT	G4S	Post Office	NatWest procure wholesale CiT	G4S
Rules and standards	• BoE – NCS (as underwriter to Vaultex)	• BoE – NCS (as underwriter to Vaultex)	• BoE – NCS (as underwriter to G4S)	• BoE – NCS • HMT (via National Infrastructure Commission as CNI)	• BoE – NCS	• BoE – NCS (as underwriter to G4S)

Note: This diagram illustrates the models of the underwriters to the NCS members only.

4 Building wholesale cash distribution for the future

45 One of the ways to ensure that cash remains a viable payment method for the foreseeable future is ensuring the wholesale cash supply chain is working as efficiently as possible, making it both resilient and more cost effective as cash usage declines. The number of cash transactions in the UK has decreased sharply in recent years. As the volume of cash transactions declines, this has led to a decrease in demand for wholesale cash processing and a decrease in the utilisation of cash centres. As many of the costs associated with cash centre operations are fixed, this has led to an increase in the unit costs of wholesale cash processing.

46 The current industry structure, as discussed in paragraph 44, means that different cash centre operators each make their own unilateral decisions about cash processing and the distribution of cash to and collection from customers, branches and cash intensive industries, which may not lead to the most effective response for the industry as a whole to declining volumes.

4.1 Rising unit costs of processing cash

47 Cash processing is characterised by high fixed costs. Independent industry analysis used 2018 costs as a baseline and found that, across the industry, around two-thirds of costs incurred by the industry were fixed costs and a third were variable costs. The gradual decline in capacity utilisation has impacted the proportion of fixed costs over time; as smaller volumes of cash have been processed, the average unit cost of processing cash has increased. There are two key risks in relation to increasing unit costs of processing cash:

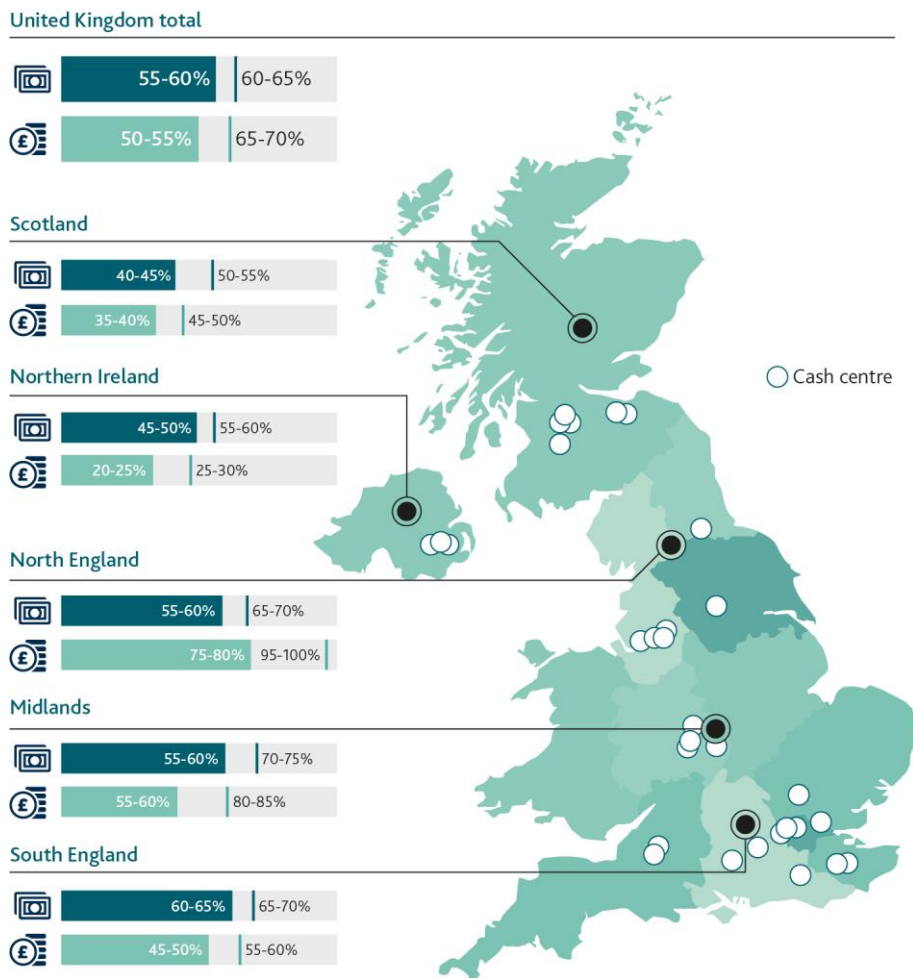
- If rising costs are not passed on to customers, this threatens the financial viability of cash centre operations and therefore the viability of the wholesale cash supply network. This subsequently results in the increased risk of disorderly exit of one or more operators to the detriment of end consumers.
- If rising costs are passed on to customers, the cost/benefit for businesses accepting cash as a payment method changes and threatens the end-user consumers' ability to use cash.

48 The latter in particular was a key finding from the ACR, which called for the preservation of end-user consumers' ability to pay for goods and services in cash. While underwriting banks and remaining operators may work to mitigate disruptions if an operator exits the industry, there nevertheless remains a risk to ensuring a timely and seamless supply of cash to consumers and businesses, absent a programme of managed change.

4.2 Current cash centre utilisation

49 While some operators have rationalised their cash centre estates and closed cash centres, utilisation of cash centres nevertheless remains low in some parts of the UK. It is important to note that some spare capacity is required within the system to be able to meet peak demand (such as the period ahead of Christmas) and ad-hoc events (such as the recent launch of the Bank's £20 banknote).

Figure 4 Average and peak note and coin capacity utilisation 2018



Source: Independent industry analysis.

Note: Figures on the right represent the peak utilisation rates. The peak utilisation reflects the annualised volumes by region for the peak week in that region, as a % of the regional processing capacity. Utilisation is calculated as notes processed as a proportion of the throughput of the high and medium speed note sorting machines available within the cash centre network. Coin utilisation is calculated as coins processed as a proportion of the throughput of the bullion and check-weight machines available within the cash centre network.

50 Figure 4, which is based on independent industry analysis, shows that average and peak note processing utilisation across the UK in 2018 was 55-60% and 60-65%, respectively (50-55% and 65-70% for coin). It is also clear that there are regional variations in both note and coin capacity utilisation rates. South England had the highest average note utilisation at 60-65% and Scotland the lowest at 40-45%. For coins, North England had the highest average utilisation at 75-80% and Northern Ireland the lowest at 20-25%.

51 While complete data, at the industry level, of cash centre utilisation over time was not available, NCS members have stated that in recent years there has been a noticeable decline in utilisation of their cash centres. Additionally, for both coin and notes, there is substantial variation in average utilisation, indicating that there is excess capacity. This exists at present in part due to the wholesale supply chain being fragmented across a number of operators. While NCS members have a mechanism in place for trading cash volumes between the members, this is carried out on a weekly basis and requires bilateral agreement between buyer and seller.

Geographical coverage

52 With multiple operators it is clear there will be overlap in coverage as individual operators seek to maintain national coverage, despite excess capacity at individual cash centres, to meet the needs of their customers who have wide geographic footprints and require services regionally or nationally. On an individual basis, there is little ability to reduce the fixed costs associated with running cash centres, especially as cash volumes continue to decline.

5 An end state model

5.1 Model assumptions - What is meant by a utility?

53 This section outlines a 'utility' model as recommended in the independent industry report. In this case, the report defines a wholesale cash utility as a single consolidated entity formed by a number of organisations who wish the utility to provide access to the NCS, S&NI and UK coin. This model is more likely to allow for a centrally managed rationalisation of wholesale cash centres reducing the fixed costs and increasing capacity utilisation across the wholesale supply of cash.

54 The remainder of section 5.1 sets out a series of working assumptions, outlined in the independent industry report, that have informed the analysis in this consultation paper, including:

- The utility would be operated by a separate new legal entity, with its own governance structures and arrangements (see below for more details).
- The utility would own the entire wholesale cash centre processing and storage infrastructure.
- Relevant assets would be valued and transferred on a fair and consistent basis to allow for subsequent rationalisation.
- Rationalisation of cash centres would be undertaken once the utility has been created and is expected to take place over time.
- Relevant sponsoring members would fund the utility. Options could include a mixture of share capital / equity and debt funding. Given the differing starting points as discussed in paragraph 44 a comprehensive funding plan would need to be developed in the next phase.
- Membership and access criteria would be set in due course on a fair, transparent, proportionate and non-discriminatory basis.
- Wholesale CiT would not be integrated within the utility (see below for more details on wholesale CiT);

55 There are a number of matters that still need to be considered, and decided upon, as part of the process to set-up a utility; including those set out below.

Governance and legal arrangements

56 Taking into consideration the role of the utility in the UK cash industry, the independent industry analysis anticipated that the operation of the utility should be underpinned by strong corporate governance arrangements that would define the relationship between stakeholders and influence how the utility operates and drives improvement.

57 It is also likely that the future utility and its sponsoring members would be guided by codes and principles of practice, similar to the Bank's Recognised Payment Systems Code of Practice²³ and CPSS-IOSCO Principles for

²³ [Bank of England Code of Practice relating to governance of recognised payment system operators \(June 2017\)](#).

Financial Market Infrastructures.²⁴ These documents reflect that a board must be appropriately balanced with no single group able to dominate, there should be regular rotation of the board and ensure that conflicts of interest do not preclude directors from being employees of the sponsoring members.

58 The utility would need to have clearly defined articles of association and we expect the utility would have a purpose and mission statement to operate in the UK public's interest. The utility would be expected to offer services on a cost recovery basis, with any profits generated used to pay down loans and other debts (depending on the funding structure).

59 In addition, it is envisaged that a meaningful consumer council(s) would be formed to facilitate stakeholders coming together to share experiences and improvement ideas in line with supply and demand and wider market dynamics.

60 WDSG notes that potential competition assessment of the proposed model structure will be a key consideration for the sponsoring members going forward.

Operations of the cash centres

61 It is expected that the Bank would continue to set NCS rules in relation to the circulation of BoE banknotes and HMT would continue to set rules in relation to coin circulation. The utility itself would be responsible for more detailed operating practices across its cash centres. As well as the maintenance of quality and authenticity of cash, these common practices would need to facilitate the effective circulation of cash. If such practices can be encouraged and implemented consistently across all centres this offers the potential to promote efficiencies and innovation. The following illustrative suggestions are from the independent industry analysis in consultation with stakeholders:

- note tray sizes to be standardised on high speed note sorting machines. This could potentially create a standardised way of transporting, storing and processing notes;
- reducing touch points and hand-offs when processing cash, in line with manufacturing environment techniques. For example, cash often moves a long distance within cash centres – implementing systems to move the cash to people rather than people moving to cash may improve processing times; and
- encouraging innovation in working patterns to reduce peak congestion and allow for economies of scale.

62 The independent analysis considered two potential options for operating the cash centres:

- the utility could integrate the operations into its control, taking its own decisions on how best to run each cash centre; alternatively
- the utility could outsource the operation of cash centres through competitive tendering. The utility would enter into contracts with the outsourced operator(s), decide how best to group cash centres for tender contracts, with an aim to promoting competition and innovation within the cash centre operations. In this scenario, the utility would not be responsible for the day-to-day operation of the cash centres. The outsourced operator(s) would manage the operation of cash centres – within the framework of operating standards set by the utility - including making decisions on staffing levels and how best to implement NCS rules, coin checking and validation standards.

63 In either case, the infrastructure owned by the utility would be able to carry out additional processes similar to those carried out in current cash centres eg, value reconciliation and ATM cassette packing.

²⁴ [CPSS-IOSCO – Principles for Financial Market Infrastructures \(April 2012\)](#).

Cash in Transit operators

64 End-point and commercial CiT is out of scope of this consultation paper, however wholesale CiT is in scope. The independent industry analysis considered the vertical integration of wholesale CiT within the utility model, which was based on the commercial assessment of the costs and benefits of in-house versus contracted provision of wholesale CiT. Wholesale CiT operators' cost bases are increasingly variable and consequently more readily scalable with demand and therefore not subject to the same degree of risk of unit price increases as volumes decline. In addition, it is not considered likely that CiT providers would service wholesale CiT requirements only; rather, CiT operators would provide retail and wholesale CiT services. Overall, the view from the independent industry analysis is that, although it is likely that the set objectives and success criteria would best be served by outsourced arrangements for its wholesale CiT, further analysis on the impact of the operation of a single utility on competition in the relevant markets will have to be undertaken prior to moving to the next phase.

65 The formation of the utility is expected to have the following effects on wholesale CiT:

- a reduction in number of cash centres may increase distances travelled between centres; or
- conversely, the level of trunking²⁵ between cash centres may be reduced because the utility surpluses and deficits could be managed more effectively both across the network and between customers at individual centres.

Cash centre capacity and rationalisation

66 Paragraph 49 explains why a certain level of excess capacity in the system is needed to respond to fluctuations in demand. A capacity buffer has been built into the model for notes and coin. This assumes a significant drop in the average UK cash centre spare capacity compared to the 2018 data.

5.2 Model assumptions - Forecasting

Appraisal period

67 The impacts have been appraised over the period from 2020-31. This approach is taken to reflect the expected transition and implementation period required to move to a new model and the potential evolution of the industry over time, for example as demand for cash usage declines over time.

68 Following setup of the end state model, the subsequent ten years of the appraisal window includes the rationalisation of processing capacity, when exit costs would be incurred.

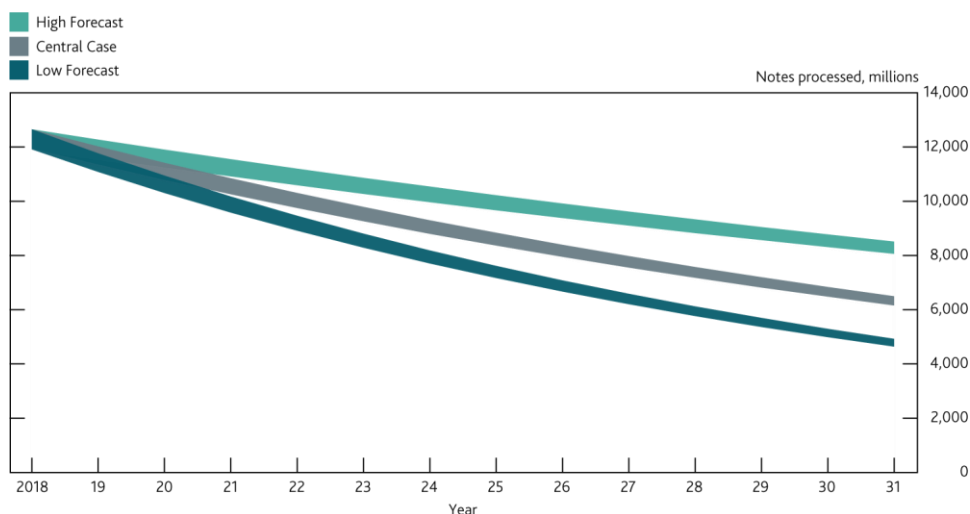
Wholesale cash demand

69 For the purposes of forecasting costs of the future wholesale cash supply chain, a year-on-year decline in wholesale cash processing was assumed. This assumes a reduction in cash processed of between 40-60% by 2031, compared to 2018 volumes.

70 Further demand assumptions have been included in the modelling and are presented in Chart 2 below. These are based on sensitively around the central demand scenario of a high and low range which assumes a reduction of between 30-40% and between 60-70% in assumed demand, respectively by 2031, compared to 2018.

²⁵ Trunking is known as the delivery of goods, in this case cash, over long distances, typically road, to and from cash centres.

Chart 2 Assumed demand – Notes processed per annum



Source: Independent industry analysis.

Box 1 Covid-19

At the time of writing this consultation paper, the UK continues to suffer the economic effects from the Covid-19 pandemic, which is currently having a direct impact on the use of cash in terms of both cash acceptance and usage, and cash withdrawals. This one-off shock is having a sudden effect on cash demand; the known immediate impacts on cash demand are set out below:

- a rapid decrease in ATM withdrawal volumes as per LINK ATM data, which demonstrated a 59% decrease in ATM transactions in April compared to the same period last year;²⁶ and
- some retailers expressing a preference for customers to pay with electronic payment methods rather than cash with the payments industry making available the option for retailers to accept contactless payments up to £45 from 1 April 2020.

Consumer payment preferences are also likely to have been impacted and it is unclear at this time how these will readjust once the UK comes out from its current lockdown.

Unless otherwise stated, the analysis included in this consultation paper is based on industry data, using end 2018 data and was compiled before the full impact of Covid-19 was clear. Forecasted data used in section 6 does not reflect the impacts of Covid-19 pandemic nor have we taken into consideration the immediate impact on 2020 figures.

While the longer-term impacts post the pandemic are unclear, the WDSG and the Bank agree there will likely be further downward pressure on the usage of cash going forward compared to the data shown throughout this document. This will likely increase the speed with which industry needs to confront the challenges outlined in this paper in relation to lower cash usage.

²⁶ By comparison, this is a substantial acceleration in cash usage decline; February and March 2020 saw declines of 13% and 33%, respectively, compared to the corresponding period last year. Source: <https://www.link.co.uk/about/statistics-and-trends>.

The view of WDSG is therefore that the impact on cash use from Covid-19 strengthens the business case for change in the wholesale supply chain towards a utility model, to help keep cash sustainable for longer and ensure that cash remains a viable payment method for those who continue to want to use it.

5.3 How would the wider industry interact with the utility?

Customer impact

71 As a provider of wholesale cash products and services, the independent industry analysis assumes that the direct customers of the utility would be its sponsoring members. Therefore, it is anticipated that sponsoring members would continue to provide products and services to the customer groups that are currently served by the wholesale cash supply chain and those sponsoring members would therefore continue to hold the customer relationship with ATM providers, retailers, corporates and non-sponsoring financial institutions (collectively 'consumer suppliers'). Consumer suppliers would continue to receive their products and services from their bank, with the utility providing the following to its sponsoring members:

- inflow cash deposit processing and receipt;
- outflow cash ordering make up for withdrawal;
- associated reconciliation/settlement and query management including discrepancy and resolution; and
- provision of management information and reporting associated with the above processing.

As stated above consumer suppliers will continue to hold their customer banking relationship with the utility's sponsoring members (as they do now with the underwriting banks). The only change expected is that their operational relationship would now be with the utility.

Box 2 Utility interaction with NCS

In conjunction with this consultation paper, the Bank recognises that under a utility scenario the Bank would need to determine how the utility interacts with the NCS. This is a decision for the Bank to take independently from the work being carried out by the WDSG.

The Bank has considered that under a utility scenario, it is likely that the utility will be a key participant to the NCS. The Bank would continue to set NCS policies and access criteria in relation to the circulation of BoE banknotes in line with its objectives to maintain monetary and financial stability. However, those NCS policies and rules are likely to be reviewed and adapted as appropriate to maintain the Bank's objectives on banknote issuance in light of the utility, including where necessary to support efficiency in the broader cash industry.

If the Bank were subsequently to decide, following consideration of the responses to this consultation and after consulting other regulatory authorities, that a single utility should become the single mechanism through which the functions of the NCS are carried out, it would be expected that the utility would have sole access to:

- new note quota, the process the Bank uses to issue new notes into the system to meet public demand while minimising the cost of note issue;
- unfit replacement, the replacement quota generated by the return of unfit notes for destruction. The Bank is able to flex the level of replacement quota for each denomination by use of a ratio for new versus unfit;
- Bond, local stores of notes held in the NCS centres to specific Bank requirements, eg, security and packing standards, which are owned by the Bank; and
- note recirculation facility, where the Bank provides funding relief to support the processes undertaken by the utility for the activities of sorting BoE banknotes and preparing them for recirculation to the public.

6 Does a utility model meet the objectives of the WDSG?

6.1 What are the alternatives to a utility model?

Alternative scenarios

72 To assess the impact of the proposed utility model, the WDSG assessed the independent industry analysis regarding a number of feasible alternative scenarios. WDSG noted that these scenarios would provide a range of different circumstances against which to examine the case for moving towards a utility structure. The alternative scenarios consider how the wholesale cash supply chain may evolve absent a managed and phased programme of capacity responses to changes in demand for cash processing. Developing what may happen in an alternative scenario involves a degree of judgement about the likelihood of events within the timeframe under consideration.

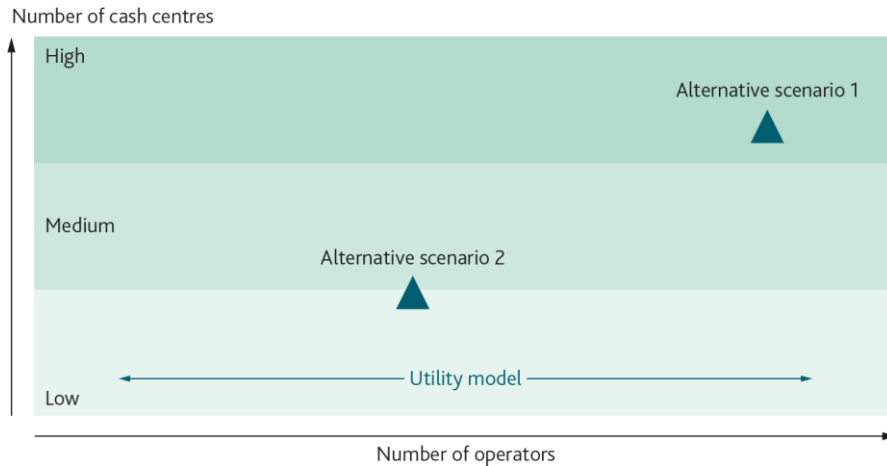
73 For the purposes of this industry business case, the horizon over which changes are considered is long: 12 years beginning in 2020. This means that any view about market developments, particularly supplier or underwriting member responses, is fraught with a wide degree of uncertainty. Describing the industry absent a programme of managed change is also complicated because of the significant changes to wholesale cash demand and the expectation that sizable decreases in cash usage, and by extension demand for wholesale cash processing, is expected to continue over the 12 year horizon considered.

74 In the time horizon considered, under the alternative scenarios, each of the current wholesale cash centre operators would assess their commercial strategy individually, based on their own commercial incentives. Relative to a managed process of change, this may lead to events which are difficult to predict with any degree of certainty, as each operator considers its financial viability in isolation. Despite the sizable uncertainty around what would occur if no centrally managed programme of change is adopted, a range of alternative scenarios have been considered which could describe the potential path for the wholesale cash supply chain. These scenarios were presented and discussed with ISG members, given their views and decisions would have a significant impact on both the supply and demand-side of the wholesale cash supply chain. Two scenarios have been shared below to show a range of potential outcomes:

- alternative scenario 1: under this scenario, each NCS and S&NI member would undertake individual rationalisation of their wholesale cash centre networks in order to reduce fixed costs. Each provider is assumed to individually provide nationwide coverage in order to meet the needs of their customers. This is expected to lead to some rationalisation of capacity, but the total number of cash centres in 2031 would remain relatively high; and
- alternative scenario 2: under this scenario, falling processing demand and increasing unit processing costs could lead to the natural consolidation of cash processing operations as well as cash centres. This leads to a larger reduction of capacity in the wholesale distribution supply chain and a natural rationalisation of the network greater than alternative scenario 1. In this scenario, by 2031 a significantly lower number of cash centres would remain by 2031.

75 Under each scenario, the number of cash centres at the end of 2031 is likely to be significantly fewer than today, in response to the declining cash usage. Under a utility scenario, that reduction is likely to be the greatest. Under such a scenario, careful consideration would be given so as to minimise the impact on staff, in line with employment law, affected by the need to reduce capacity in response to reduced cash usage.

Figure 5 Industry alternative scenarios by number of operators and cash centres



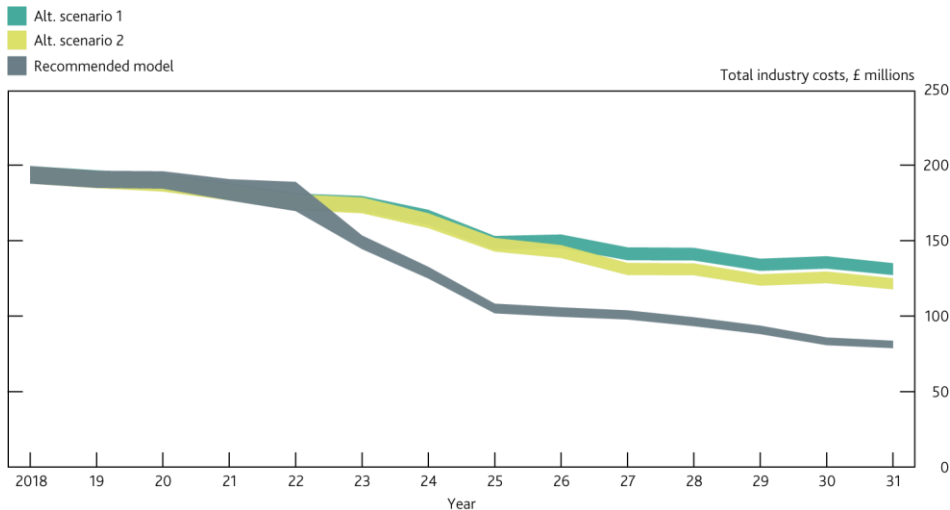
Note: As discussed in paragraph 62 the utility could have a single operator if operations are kept within the utility, or more where operations are outsourced. No decisions have been taken on these aspects, and the above is purely an illustration.

6.2 Comparing the utility model to the alternative scenarios

Effectiveness

76 WDSG defines effectiveness as the ability of the end state model to ensure cash demand is met efficiently, while the quality and authenticity of banknotes and coin in circulation is maintained or improved. The end state model must also maintain or enhance cash services available to users of cash (consumers and businesses).

Chart 3 Wholesale cash industry annual costs (£mn)



Source: Independent industry analysis.

Note: Assumes a year on year reduction in cash processing demand in line with the central assumption on changes in wholesale cash demand. Projected costs exclude inflation.

77 The current estimate of industry costs in 2018 was between £180-200mn. Chart 3 shows that a utility model enables demand for cash to be met more efficiently as it leads to lower costs than would be seen in any of the alternative scenarios, and in 2031 the annual industry costs are expected to be materially (ie, greater than 50%) lower for the recommended model compared to 2018 costs. Over the appraisal period this implies a total cost saving of at least £200mn when compared to the least-costly alternative scenario (scenario 2), under the central

assumption on changes in wholesale cash demand, consequently reducing the total wholesale running costs of processing cash. Adopting the recommended model also incurs costs relating to the setup and running of the utility, which can be seen as a slight increase in upfront costs.

78 A more holistic cash centre rationalisation programme results in lower processing CPU and lower management costs, as rationalising cash centres reduces a large proportion of the fixed costs in the industry. In addition, a utility would be better placed to instigate a programme of variable cost efficiencies, when compared to the alternative scenarios. From 2023, notes and coin CPU under the recommended model are forecast to be lower or equal to CPU under the two alternative scenarios and lower than 2018 CPUs. For notes CPU, alternative scenario 1 has a higher CPU than current levels over the appraisal period, while alternative scenario 2 has a lower CPU than 2018 levels over the majority of the period, though remains above the recommended model.

79 A utility is expected to also maintain and/or improve the quality and authenticity of banknotes and coin in circulation. The rationalisation of cash centres would allow for a smaller number of cash processing machines, which would lead to the speedier adoption of upgraded machinery to occur and at a lower total cost universally across all UK cash centres, than in the alternative scenarios.

80 A utility is likely to facilitate the development of enhanced cash services (ie, improved local cash recycling) more effectively, as a single operator would be able to integrate innovations into the network more comprehensively than individual operators would. If operations were outsourced, the utility could also build an incentive for innovation into any procurement process.

Resilience

81 WDSG defines resilience as the ability of the end state model to be both secure and resilient and able to demonstrate it can survive plausible market shocks.

82 Under a utility, there is a lower risk of rationalisation or unexpected exits of industry participants which harms end consumers, and which results in increased resilience compared to the alternative scenarios. The utility would have full control of the level of spare capacity in the system and ensure excess demand between cash centres can be reallocated efficiently. This is important, as there is a trade-off between reducing fixed costs through closing cash centres and potentially reducing the ability of the industry to respond to shocks. A utility is more likely to be able to forecast, and be held accountable for, a realistic level of spare capacity across the system that is required to maintain resilience, while taking into consideration the cost involved. Individual operators are only able to focus on their own capacity and customer requirements, which leads to a greater overall level of contingent capacity in the system, which is more costly and less efficient.

83 A utility model would be able to better support the role of cash as a viable contingency for other payment methods in reasonable circumstances. Under a utility there would be a system-wide view of demand, which would allow for system-wide decisions on cash centre rationalisation, a reduction in processing capacity sooner than if no action is taken and the ability to ensure sufficient spare capacity to meet sudden increases in demand (as discussed in paragraph 49). Individual operators do not currently have a standard agreement in place to coordinate in this manner. Under the central demand scenario, the independent analysis concluded that a utility is expected to maintain a minimum of around 15% spare capacity for processing notes and around 20% or more for coin in business-as-usual and broadly has sufficient capacity to meet peak demand scenarios.

84 Chart 4 and 5 below compare the utilisation of note and coin processing capacity under a utility model versus the alternative scenarios, respectively.

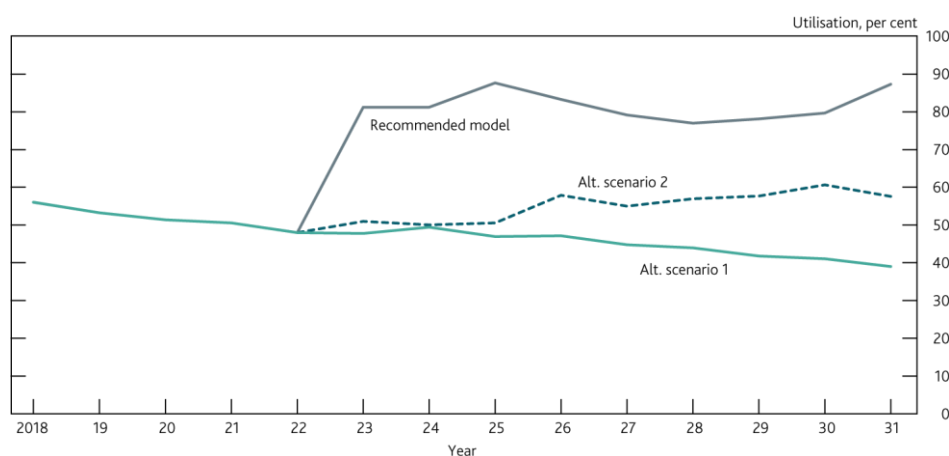
85 Utilisation is estimated to be the highest under the utility model for both notes and coin; the sharp increase represents the initial rationalisation of cash centres expected. Utilisation in the alternative scenarios is estimated

to be highest under alternative scenario 2, with utilisation of processing capacity for notes estimated at 60% or less and for coins at 50% or less.

86 By the end of the appraisal period, capacity utilisation under alternative scenario 2 for notes increases, given the consolidation that is expected to occur in this alternative scenario, but is still below the recommended model's utilisation rates. It also takes longer for utilisation levels to increase under alternative scenario 2 compared to the recommended model. Note processing utilisation under average demand is estimated at around 90% from 2031 onwards with the utility; coin capacity is estimated to be around 60%.

87 Under the alternative scenarios, the capacity buffer is substantially higher than is reflected in the independent industry analysis and in nearly all cases in excess of 40% for notes and 50% for coin, implying excess capacity above the levels required for resilience, thereby leading to inflated industry costs.

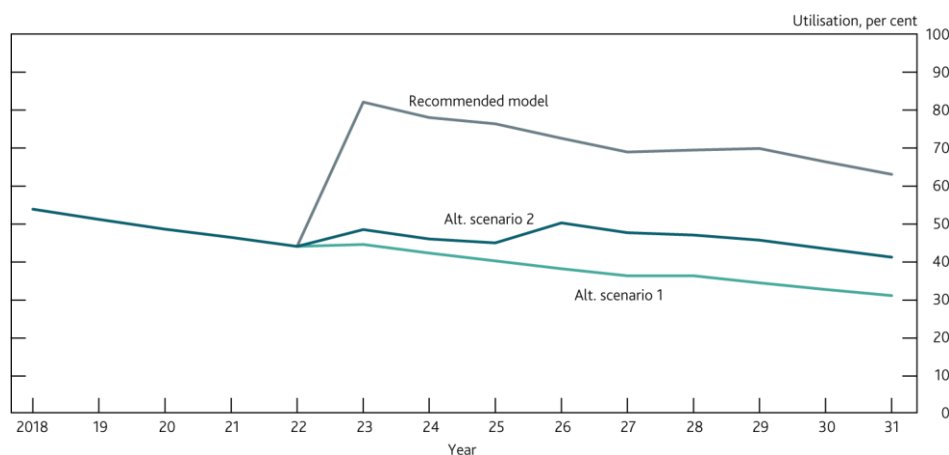
Chart 4 Capacity utilisation for note processing



Source: Independent industry analysis.

Note: Under central assumption on wholesale cash demand. Utilisation is calculated as note processing demand as a proportion of the throughput of the high and medium speed note sorting machines available within the cash centre network in the relevant year.

Chart 5 Capacity utilisation for coin processing



Source: Independent industry analysis.

Note: Under central assumption on wholesale cash demand. Utilisation is calculated as coin processing demand as a proportion of the throughput of the bullion and check-weight machines available within the cash centre network in the relevant year.

88 Utilisation and spare capacity are linked to the mechanisms by which expected cash centre rationalisation would occur. Under the model recommended by the independent industry analysis, rationalisation occurs via

centrally managed closure of cash centres and is expected to occur at a faster pace with a utility, and with fewer cash centres remaining by 2023 relative to the alternative scenarios.

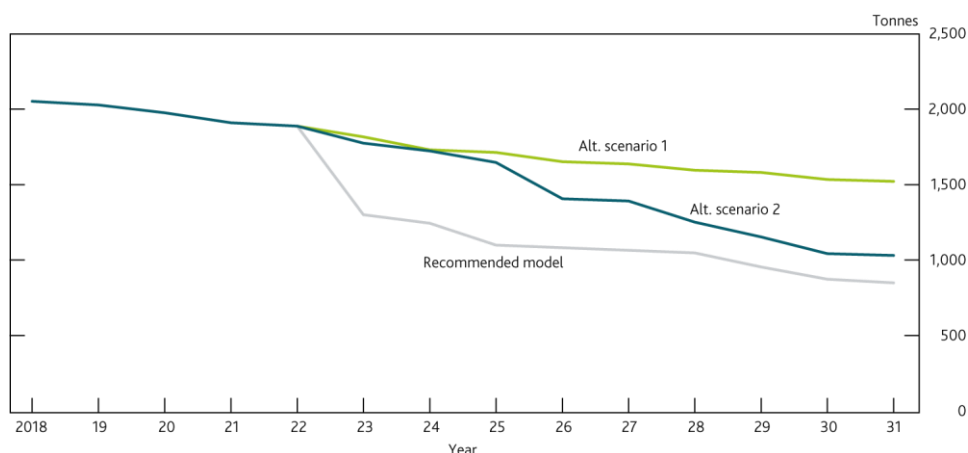
89 Paragraph 56 notes that effective governance structures are assumed and desirable; it is also key to ensuring operational resilience. The ability to fully assess this has not been possible at this stage as it is largely dependent on the set-up of the utility and whether cash centre operations are outsourced. A utility with ownership and operational responsibilities would have greater direct control over cash centre operations. While in an outsourced model, the utility would rely on its contractual terms with the operators to influence cash centre operations.

Sustainability

90 WDSG defines sustainability as the positive business case that should underpin the recommended model over the timeframe being considered, and minimise the environmental impacts of wholesale distribution. The independent industry analysis concluded that the utility generates better outcomes in this respect compared to the alternative scenarios set out:

- A utility improves the financial sustainability of the wholesale cash industry. As seen in Chart 3 a utility would improve the industry costs compared to the alternative scenarios, as a result of a reduction in fixed costs via rationalisation of processing capacity, and a reduction in variable costs via synergies, including some enabled by the utility. This results in lower processing CPU for both notes and coin.
- Customers are expected to benefit from the utility model compared to the alternative scenarios, as lower industry costs can be passed on to ensure that cash remains an attractive option for retail cash providers to continue to provide and for retailers to accept. Application of the sensitivity analysis represented in Chart 2 shows that the effect of a high and low forecast year-on-year decline in wholesale cash processing applied to the two alternative scenarios indicate that the recommended model still has the lowest industry costs compared to the alternative scenarios. The same applies for notes CPUs, however for coin CPUs this is true until 2030.
- A utility would also help prevent the quality or range of wholesale cash processing services from deteriorating even in the face of a continued decline in the demand for cash and cash processing, as the utility will have a set mandate to provide certain products and services (as set out in section 5.3).
- Customers also benefit from increased transparency, coordination and control over the wholesale distribution supply chain under the recommended model. This is the case when compared to a disjointed response to increasing external pressures and demands, as individual operators do not have the systems in place to automatically re-allocate excess demand between cash centres. Consequently, access and acceptance of cash is likely to be more sustainable and attractive under the recommended model than in the alternative scenarios.

Chart 6 Total wastage (tonnes per annum)



Source: Independent industry analysis.

Note: Under central assumption on wholesale cash demand.

91 A utility enables a centrally managed reduction in the number of cash centres, resulting in fewer cash centres remaining open in 2031 compared to the alternative scenarios, as individual operators seek to maintain national coverage to meet the needs of their customers. This results in lower gas usage, electricity usage and waste production under the recommended model. Specifically, adopting the recommended model would lead to estimated reductions of 60% annual tonnes of waste compared to waste produced by the industry in 2018. In addition:

- If the utility also operates the cash centres it could directly change the practices of the cash centres to decrease environmental impacts ie, investment in more energy efficient heating equipment, insulation, or more energy efficient machinery.
- If the utility outsourced operations, it could set certain standards or introduce incentives into contracts with operators to encourage improvements in environmental impact.

92 It has not been possible to quantitatively assess the effects on fuel usage of moving to the recommended model due to limited data available. Cash miles and fuel usage of CiT may reduce faster and more consistently under a utility, as it would drive consistent implementation of environmental standards. The utility would also eliminate the duplication of national networks required under the alternative scenarios. On the other hand, as the number of cash centres decreases, additional trunking may need to occur, for longer distances. Overall, it is uncertain what the net impact on cash miles or CiT movements would be under the recommended model, compared to the alternative scenarios.

93 Environmental outcomes could be further improved by closing the worst performing cash centres in respect of their environmental footprint, albeit there may be a trade-off between some cost centres having a higher environmental impact, but being more cost efficient. The utility may place more weight on the environmental impact of individual cash centres when choosing to close cash centres, compared to if this were done by individual operators. Further work will be required to establish the criteria for determining the relative merits of different centres and the weight given to these environmental factors.

94 A utility would minimise the environmental impact of wholesale distribution of cash as set out above. The utility would have control/influence when choosing to close cash centres, closing those centres with the largest environmental impact. Without a single utility, a greater number of cash centres would remain open resulting in higher gas and electricity usage under the central demand scenario.

95 In accordance with the WDSG success criteria, the end model must comply with UK law and regulations and must be able to demonstrate that it will not result in any substantial lessening of competition and innovation at appropriate points in the distribution chain, while maintaining or enhancing access to cash services. WDSG is, therefore, of the view that further consideration of competition impacts needs to be made separately as noted in section 7.2.

Deliverability

96 WDSG defines deliverability as the ability to deliver the end state model within the available capacity and capability of the industry, while ensuring transition risks are acceptable and can be appropriately managed and/or mitigated. In accordance with the WDSG success criteria, the model must also deliver the outcomes desired by the wholesale cash supply chain stakeholders; and as this work progresses the WDSG will ensure the end state model meets the above success criteria for deliverability.

7 Interaction with regulation

7.1 Oversight of the utility

97 While the design of the oversight of the utility is not within scope of this consultation, it is important to note that the creation of a single utility for wholesale cash distribution could become the main source for wholesale cash supply, and would therefore be materially more important for the stability of the system than any current individual entity.

98 The aim of any oversight should be to ensure the cash supply system meets the needs of consumers and the wider economy for cash over the long term and thereby supports the Bank's mission of promoting the good of the people of the United Kingdom by maintaining monetary and financial stability through promoting confidence in the currency. A new utility, operating under that oversight, would need to meet the needs of consumers and the economy for cash in a resilient and efficient way, reducing the risks recognised in the current wholesale cash supply system.

7.2 Other considerations

99 To the extent that the formation of a single utility might involve a consolidation of the assets and operations of the current underwriters into one joint entity, the relevant competition law authorities will need to be involved in order to assess the proposed model structure.

100 There could also be scope for legislative intervention to enable a faster and smoother transition to a new cash distribution system; the Bank will continue to liaise with HMT regarding this.

8 High-level timeline

101 This section sets out the immediate next steps that are expected to take place before the end of the year and a high-level roadmap of the following years.

102 The consultation period will run for a period of two months to 24 August 2020.

103 Once feedback has been received from this consultation paper, the Bank in conjunction with WDSG will assess the responses. The Bank will consider whether it is appropriate to publish a report on the responses received in an anonymised and, to the extent possible, suitably aggregated form.

104 Once the Bank and WDSG have considered the consultation responses, the Bank and members of the WDSG, and other participants in the wholesale cash system, will each need to decide how to respond to the model set out in this consultation and the consultation responses, and on the future phases of work and the timescales for those phases. If some or all participants agreed to proceed with a new model, the following broad phases of work would be expected:

- **Establish** - this stage of work is intended to cover work required ahead of final decisions by individual future participants of the utility, relating to the execution of the utility set-up. This phase is expected to run from end 2020 and take up to six months.
- **Execute** - this phase is likely to encompass a 12 month period to allow for preparatory work required ahead of go live. Detailed process design work and testing would occur during this phase to ensure the utility effectively operates once live.
- **Operate** - this phase encompasses a nine month period and beyond to start the operation of the utility and conduct the efficient and effective running of it.

9 Consultation paper questions

- i. Do stakeholders agree that moving to a utility model would be more appropriate to maintain an effective, resilient and sustainable wholesale cash supply chain in the UK in the face of declining cash usage compared to the alternative scenarios set out in paragraph 74?
- ii. Are there any alternative and/or additional proposals or factors that WDSG should take into account when progressing this programme of work? In particular, are there impacts on the wider cash industry or end-user access to cash that should be considered further?
- iii. Are there any design elements that would make the utility more or less successful from the perspective of the broader cash industry? For example, do stakeholders have views on the options for operating the cash centres set out in paragraph 62?
- iv. Do stakeholders have any concerns about the timing of this programme of work that WDSG should take into consideration?

Annex 1 Glossary of terms

Access to Cash Review (ACR)

An independent ACR was launched in July 2018, focussing on concerns around access to cash and its long-term viability as a payment method. At the core of these concerns was the potential impact of a society, which is increasingly cashless, but may risk leaving behind a wide segment of society, which is fundamentally reliant on cash access and usage. The ACR was published in March 2019 and made five recommendations, all designed to keep cash viable for the foreseeable future:

- to guarantee consumer access to cash – ensuring that consumers can get cash wherever they live or work;
- to take steps to keep cash accepted, whether by a local coffee shop or a large utility provider;
- to call for radical change to the wholesale cash infrastructure, moving from a commercial model to more of a 'utility' approach, which will keep cash sustainable for longer;
- for government, regulators and the industry to make digital inclusion in payments a priority; and
- for a clear government policy on cash, supported by a joined-up regulatory approach which treats cash as a system.

Future Cash Supply Chain Working Group (FCSCWG)

The FCSCWG was set up to undertake a piece of discovery work to identify possible options for a 'future state' cash supply chain model in Great Britain taking into account the projected fall in cash usage. This included building a case to support the future model, that protected existing customer requirements and created a secure, resilient, and cost effective model fit for the future to ensure that cash remains one of a suite of payment options for consumers and businesses. The group was formed of the following underwriters of the wholesale cash supply chain in the UK – Barclays, Clydesdale and Yorkshire Banking Group,²⁷ HSBC, Lloyds Banking Group, NatWest, Santander and the Post Office. The Bank, HMT and the Royal Mint attended working group meetings as observers.

Local cash recycling

Retailers and businesses can use banknotes received from their customers to fill their own note-dispensing machines, like ATMs and self-service tills. This is known as local recycling; in these situations notes are not returned to the NCS and authenticated. The Bank and the cash industry sponsor a local recycling code, to encourage retailers and business to authenticate banknotes prior to them being locally recycled via machines.

Note Circulation Scheme (NCS)

The Bank's Note Circulation Scheme governs the distribution, processing and storage of banknotes. It provides a framework for the wholesale commercial cash industry, which helps encourage efficiencies in their banknote operations. Legal agreements and rules underpin how the NCS operates. It also promotes an effective, resilient and secure method for note distribution, ensuring businesses and consumers can confidently access cash.

Scottish and Northern Ireland banknotes (S&NI)

Only the Bank of England issues banknotes in England and Wales, but seven commercial banks in Scotland and Northern Ireland can also issue banknotes. Three banks are authorised to issue banknotes in Scotland: Bank of

²⁷ Now rebranded as Virgin Money UK.

Scotland plc, Clydesdale Bank plc and the Royal Bank of Scotland plc. Four banks are authorised to issue banknotes in Northern Ireland: Bank of Ireland (UK) plc, AIB Group (UK) plc (trades as First Trust Bank in Northern Ireland),²⁸ Northern Bank Limited (trades as Danske Bank) and Ulster Bank Limited.

Wholesale Distribution Steering Group (WDSG)

In 2019, the Bank convened relevant industry participants to design a new model for wholesale cash distribution that will support the UK in an environment of declining cash volumes. This is consistent with the findings of the ACR, which identified the cost of wholesale cash processing as a potential barrier to the public's access to cash in the future. The intended outcome of the steering group is to put forward a new model for wholesale cash distribution that is effective, resilient, sustainable and meets the needs of the UK public, supporting continued access to cash. WDSG membership:

Chair	Core voting members	Other attendees	Observers
Chief Cashier, Bank of England	Barclays Clydesdale and Yorkshire Banking Group HSBC Lloyds Banking Group Post Office RBSG Santander	Bank of England UK Finance	HMT AIB Group (UK) plc (trades as First Trust Bank) Bank of Ireland (UK) plc Northern Bank Limited (trades as Danske Bank)

²⁸ First Trust Bank will cease issuing its own notes on 30 June 2020 and removed from circulation on 30 June 2022. See [website](#) and [announcement](#) for details.

Annex 2 International models

Falling cash usage is an issue for many other economies and the FCSCWG looked at the cash supply chain in other countries, focussing on Australia, the Netherlands and Sweden. The working group drew a number of high-level conclusions from experience in these countries:

- Other countries have acted to reform their wholesale cash supply chain against a background of falling cash usage recognising the need to provide cash for those who continue to use it.
- Some countries have re-structured their supply chains into utility models to increase their resilience, efficiency and help secure access to cash.
- In some countries, they have extended (or are now considering doing so) the utility structure to include ATM provision alongside cash centres and CiT.
- These joint ventures, supported by the main banks, drive horizontal efficiencies through single and multi-source provision.
- The principal difference between the joint ventures is: in Sweden operation of the centres is outsourced; in the Netherlands banks own and operate the centres and outsource CiT.
- There is vertical integration between cash centres and CiT in some geographies (Australia, Sweden).

The jurisdictions below are at the frontline of a decline in the level of cash usage ie, where alternative payment methodologies and/or industry innovation have driven cash usage below 40% in recent years, similar to what has been seen in the UK. In these jurisdictions, similar utility models have been created to deal with the challenges in wholesale cash distribution.

Sweden

The ACR noted that Sweden was at the forefront of moving to a cashless society with the lowest use of cash in the world in 2018 at 15%.²⁹

In 2004, the Swedish central bank (the Riksbank) decided that the wholesale cash supply chain should be run by commercial banks, and in 2005 the five largest banks (Danske Bank, Handelsbanken, Nordea, SEB and Swedbank) formed a joint venture, Bankernas depå AB (BDB). BDB owned the cash centres and outsourced operations to a number of companies. A Cash Handling Advisory Board was established by the Riksbank in 2006. Besides the Riksbank, the board was made up of representatives from banks, cash depot companies, security transport firms, the retail trade and the authorities involved.

In 2010, Bankomat AB (BAB) was formed, owned by the same five largest banks in Sweden. The company took over the management and operations of the owner banks' ATM network. In 2017, BDB and BAB merged to operate under the brand Bankomat AB.

Since 2016, a cross-party parliamentary committee, the Riksbank Committee, has been reviewing monetary policy and legislative framework, which includes responsibility for cash management and provision. In June 2018, the Riksbank Committee issued an interim report entitled 'Secure access to cash', proposing that banks and credit institutions that provide checking accounts and have more than 70bn kronor (c£6bn) in deposits from the Swedish public must offer cash withdrawals and handle cash deposits.

²⁹ Riksbank Payment patterns in Sweden, May 2018.

The legislation is intended to ensure 'reasonable access' to cash services is maintained throughout the country, In defining 'reasonable access' to cash, the committee proposed that at least 99.7% of the population should be within 25km of a cash withdrawal point and at least 98.8% of the population should be within 25km of a cash deposit point.

In September 2019, the Swedish government submitted the proposals from the interim report to parliament. The proposal was voted through in November 2019 to enter into force on 1 January 2020, but will not take effect in practice until January 2021.³⁰

The Netherlands

De Nederlandsche Bank (DNB) is responsible for regulatory supervision of the financial system. DNB supported the joint venture and cooperation between the three main banks ABN AMRO, ING and Rabobank in 2010. The joint venture was called Geldservice Nederland (GSN) and was set up to provide logistical services such as cash collection and distribution for the three banks. There are other privately owned cash management firms still operating outside of GSN.

In 2017, the same three major banks announced they were consolidating their ATM networks to create an independent ATM network, for withdrawing as well as depositing cash, to ensure that cash remained an accessible, secure and affordable payment option in the long term. The management of the ATMs and the underlying processes were transferred to Geldmaat (GSN was renamed Geldmaat in 2019); and Geldmaat started the migration process to the new ATM network in 2019. The new integrated supply chain is expected to be operational by end 2020.

³⁰ See Riksbank [report](#) and [press release](#) for further details.