National Audit Office

Report
by the Comptroller
and Auditor General

HM Treasury, Bank of England, The Royal Mint,
Financial Conduct Authority, Payment Systems Regulator

The production and distribution of cash

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Key facts

59%

decline in the volume of cash payments between 2008 and 2019

17%

decrease in the number of free-to-use automated teller machines (ATMs) in the two years to December 2019, to around 45,000

£143m

public sector cost of producing and issuing notes and coins in 2019-20

65%	forecast reduction in the use of cash between 2018 and 2028
71%	decline in the market demand for notes and coins from cash centres between early March and mid-April 2020 as a result of the COVID-19 emergency, although demand has since been recovering
5	number of public bodies responsible for administering or overseeing the cash system
65%	reduction in annual volume of coins purchased by HM Treasury from the Royal Mint between 2010-11 and 2019-20
£50 billion	approximate value of notes in circulation not being used for transactions or identified as savings held by UK households
10 years	minimum length of time forecast by the Royal Mint in March 2020 that it would take for stocks of 2p and £2 coins to run out
£590 million	income from seigniorage from note production paid by the Bank of England to the National Loans Fund in 2019-20 after deduction of note production expenses

Summary

1 For generations coins and notes have played a central role in society as the primary means of payment. Over £100 billion is spent in shops using coins and notes every year and until 2017 cash was the most frequently used payment method in the UK.

2 The use of cash in transactions is, however, in decline: 10 years ago, cash was used in six out of 10 transactions, and last year it was less than three in 10. Forecasts have suggested that this might fall to one in 10 by 2028. A recent drop in the use of cash during the COVID-19 pandemic may accelerate that trend. The decline in the use of coins and notes has implications for the production of cash and the infrastructure used to distribute cash to citizens and businesses to meet everyday needs. Although many people have become less reliant on cash, most adults still use cash at least some of the time and some sections of society remain largely reliant on cash, for example it is estimated that just over a million UK adults do not have a bank or building society current account or equivalent.

3 The cash system is large and complex. Coins are produced for the whole of the UK by The Royal Mint (the Mint) under a contract with HM Treasury. The Bank of England (the Bank) produces notes for use throughout the UK. Designated commercial banks also produce notes in Scotland and Northern Ireland. Cash is distributed across the country by major commercial wholesale operators, comprising the major banks and Post Office Ltd. There is also a large network of commercial companies operating local cash centres to store cash, transport cash and operate the network of free-to-use and pay-to-use cash machines.

4 Running the cash system incurs costs for both taxpayers and businesses. The production costs of notes and coins are offset by income resulting from their sale to the market at face value. In 2019-20, the Bank incurred note production and distribution expenses of £119 million and HM Treasury incurred UK coin production expenses of £23.6 million. Research commissioned by the finance sector has estimated that the UK's entire cash infrastructure (including cash processing and distribution for private businesses) costs around £5 billion a year.

5 The continuing reduction in the use of cash in transactions is putting pressure on the cash system. Many of the costs of cash production and distribution are fixed. Commercial operators have warned of pressures on their business models, which have previously depended on higher cash volumes to maintain the commercial attractiveness of their operations. Consumer organisations have raised concerns that reductions in the ability of people to access cash, and increasing costs to business of using cash, if not properly managed may increase the risk of financial exclusion for sections of society dependent on cash.

6 The government's policy is to safeguard access to cash for those who need it, while supporting digital payments. HM Treasury has responsibility for delivering the policy aim. A range of public bodies have responsibility for aspects of the cash system:

- Responsibility for producing and maintaining the integrity of coins and notes sits with HM Treasury and the Mint, and the Bank respectively. This includes responsibility for reducing, through design and innovation, the risk of counterfeiting.
- The wholesale distribution of notes in England is undertaken by four major commercial companies governed by a set of contractual arrangements with the Bank, known as the Note Circulation Scheme.
- The wholesale distribution of coins is carried out solely by the private sector. The Mint has no responsibility for how coins are distributed.
- The Payment Systems Regulator (PSR) is an economic regulator responsible for promoting competition, innovation and the interests of consumers and other users of UK payment systems, including specifically the automated teller machine (ATM) network overseen by LINK, a private not-for-profit company run on behalf of its commercial members.
- The Financial Conduct Authority (FCA) is the conduct regulator for financial markets in the UK. Its strategic objective is to ensure that markets function well. Its role includes protecting consumers and promoting competition between financial services providers.

7 In May 2019, HM Treasury established a new coordinating group, the Joint Authorities Cash Strategy (JACS) Group, to "set up strategy, coordinate work to support nationwide access and help safeguard cash for those that need it".[1] The group is chaired by HM Treasury officials and also comprises the Bank, the FCA and the PSR. The Group published an update in July 2020 on developments within the UK's cash infrastructure and the work of JACS Group members.[2]

1 The Joint Authorities Cash Strategy Group terms of reference are available at: www.gov.uk/government/publications/joint-authorities-cash-strategy-group-terms-of-reference

2 Joint Authorities Cash Strategy (JACS) Group, *Safeguarding the UK's cash infrastructure*, July 2020, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/900535/JACS_Group_Update_July_2020.pdf

8 In its March 2020 Budget, the government announced that it would bring forward legislation to protect access to cash and ensure that the UK's cash infrastructure was sustainable in the long term. In June 2020, the Bank, on behalf of the Wholesale Distribution Steering Group, which includes the major commercial note distributors, issued a public consultation on potential 'end-state models' for the wholesale distribution of cash in the UK, which would support continued access to cash in an environment of declining cash volumes.[3]

Study scope

9 This report examines the role played by the public bodies in operating and overseeing the cash system at a time of rapid change in society's use of cash. The report examines:

- how the cash system currently operates in the UK;
- whether the key public bodies have clear objectives and responsibilities for delivering the government's aims for the cash system and adequate information on how well the system meets consumer needs, and the action taken to deliver the government's aims; and
- how well the Mint, on behalf of HM Treasury, and the Bank oversee and manage coin and note production respectively, and the extent to which they have reduced the threat of counterfeiting.

Key findings

Oversight of consumer interests

10 The public bodies have improved their joint working but lack a shared view of what a good outcome for the consumer will look like and how the costs of achieving this are to be taken into account. There is no single body with responsibility for overseeing how well the cash system is performing. It is therefore important that the public bodies work in a coordinated way for the government to deliver its aim. The PSR and the FCA have statutory consumer protection objectives and functions, but, while PSR's responsibilities include regulating LINK's oversight of the ATM network, none of the statutory objectives refer specifically to cash. The JACS Group has enabled more formal coordination among its participants, although it does not itself have responsibility for the cash system and is not a decision-making body. We could not see a clear link between the overall government aim for cash and consumers, the outcomes that consumers should expect in terms of access and acceptance of cash and their associated costs, and the statutory responsibilities of the public bodies as set by government and Parliament. No public body has, for example, explicit responsibility for tracking trends in the acceptance of cash, although the FCA has commissioned research in 2020 to improve its understanding (paragraphs 2.3 to 2.6, 2.19 and 2.22, and Figure 4).

3 Wholesale Distribution Steering Group, *Consultation on the Future of the UK's Wholesale Cash Distribution Model*, available at: www.bankofengland.co.uk/banknotes/wholesale-cash-distribution-in-the-future

11 **The FCA and the PSR are developing their understanding of which consumers use cash most, and why they need it.** Information on consumer needs can help regulators target their actions to help people who would face practical difficulties should their ability to access and use cash become limited. There is no single public body responsible for collecting information on consumer needs. The PSR and the FCA have each commissioned research, some ongoing, aimed at understanding which groups of consumers are most reliant on cash and how they are affected by changing cash availability. Research suggests that cash use tends to be higher among lower income groups and older age groups (paragraphs 1.6 and 2.8 to 2.12).

12 **The FCA and the PSR are now drawing together information on locations where access to cash is more limited.** There is good information on numbers and locations of cash access points, including ATMs and bank and post office branches, but less information available on cashback facilities. Until recently these data sources were not being brought together to develop a holistic view of areas where provision could be particularly limited. In March 2020, in response to the COVID-19 emergency, the regulators collected data from industry to map access to cash in the UK. They are now building on this, working with the University of Bristol to produce a national map of access to cash and to help assess 'reasonable access' to cash (paragraphs 2.14 to 2.16).

13 **At present no public body has been given responsibility for reporting how well the cash system as a whole is meeting the government's aim.** The FCA and the PSR collect and produce a range of information about how different aspects of the cash system affect consumers. However, there are no systems in place, or planned, bringing together measurement, analysis and reporting on the performance of the cash system as a whole. The PSR has developed proposals for a 'consumer tracker', which would measure aspects of consumer needs and ATMs coverage. However, the PSR informed us that it has delayed implementing these proposals due to the COVID-19 pandemic (paragraphs 2.3 and 2.13).

14 **The number of ATMs is decreasing although LINK's actions, backed by steps taken by the PSR, have protected ATMs in specified areas where provision is limited.** Most cash withdrawals (90%) are made through ATMs. In the two years to December 2019 the total number of ATMs decreased by 12% to around 60,000 and the number of free-to-use ATMs fell by 17% to around 45,000, although the number of free-to-use ATMs at the end of 2019 remained higher than a decade earlier. In 2018 LINK made a commitment to maintain its existing footprint of free-to-use ATMs where provision was most limited, protecting around 2,900 ATMs at December 2019. The PSR has supported LINK's actions and taken steps to strengthen LINK's commitment and processes. The industry, with the PSR's encouragement, has launched additional initiatives to address cash access needs (paragraphs 2.14, 2.17, 2.18, 2.23 to 2.27 and 2.33, and Figure 5).

15 The PSR has focused on geographical access to free-to-use ATMs but has paid less attention to analysing the impact in more deprived areas. Overall the percentage of ATMs that were free-to-use in England fell from 81% to 76% between 2018 and 2020. The impact of cash system changes on consumers can be measured in a number of ways, including by the number and proportion of free-to-use ATMs available to consumers based on the level of deprivation in their area. Our analysis indicates that there is a much higher number of free-to-use ATMs in more deprived areas and, in the two years to January 2020, the number of free-to-use ATMs fell across all bands, from least to most deprived. During the same period the proportion of free-to-use ATMs declined faster in more deprived areas. Interpreting this requires caution because there is not a simple relationship between the availability of free-to-use ATMs and access to cash or consumer detriment, for example urban areas with a daily influx of commuters may historically have had good access to free-to-use ATMs. Since 2006, LINK has run a scheme aimed at addressing the risk of financial exclusion. The PSR does not have a specific statutory objective for financial inclusion, although it told us that it plans to include the above measures in its consumer tracker (paragraphs 2.24 and 2.28 to 2.31, and Figures 7 and 8).

16 Cash use has declined significantly during the COVID-19 pandemic and this may have a lasting impact on cash access and usage. Data collected by the cash industry suggest that demand for notes and coins declined by 71% between early March and mid-April during the COVID-19 lockdown but has since been recovering. During this period some retail businesses decided to suspend acceptance of cash as a means of payment. It is still too early to assess the longer-term impact of this period on cash access and usage. The experiences of consumers during this period may offer new insights for the future into the potential impact of markedly reduced cash use on vulnerable groups (paragraphs 1.2 and 1.6, and Figure 3).

Production of coins and notes

17 The Mint, on behalf of HM Treasury, and the Bank share largely the same objectives for the production of cash although they manage production in different ways. Both organisations seek to ensure that there is a sufficient quantity of cash to meet the needs of the economy, and to maintain the public's confidence in the UK's coinage and notes. The management and production of coins and notes are organised differently:

- **Manufacturing arrangements:** The Mint produces all of its coins at its site in Llantrisant, South Wales. About one-quarter of its coin-making is for UK circulation with the remainder manufactured for overseas contracts. The Mint operates under a strategic framework set by HM Treasury, which requires it to deliver an overall target profit on each of its business operations. The Mint's UK coin-making activities are determined by a HM Treasury contract, which sets out further operational specifications. Since 2003, the Bank has sub-contracted the printing of notes to De La Rue, a UK-based printing company, at a Bank-owned production site in Essex. Production risk is shared between the Bank and De La Rue: the Bank owns the production machinery and De La Rue pays a charge to use it.

- **Distribution:** Banks and other commercial entities collect coins from the Mint's premises and manage distribution. The Bank operates a different arrangement for notes, known as the Note Circulation Scheme, whereby four commercial entities are permitted to manage the wholesale distribution of notes. The retail distribution of notes beyond the network of wholesale cash centres is left to the market.

- **Financing:** HM Treasury pays the Mint a set price for each coin produced, which includes a profit margin, and also pays for base metal costs. In 2019-20 HM Treasury paid £23.6 million, including £10.4 million for coins and £13.1 million for base metal.[4] The Bank's note operations are funded by income from 'seigniorage': the Bank sells manufactured notes at face value to members of the Note Circulation Scheme and invests the proceeds in interest-yielding assets. The interest earned is paid by the Bank to the National Loans Fund each quarter, after deducting its notes production and distribution costs. In 2019-20, the Bank paid £590 million to the National Loans Fund, after deducting note expenses of £119 million (paragraphs 3.1, 3.2, 3.15, 3.16 to 3.18, and 3.31 to 3.33).

4 Numbers do not sum due to rounding. The total amount paid by HM Treasury was £23.558 million.

18 **The volume of coins manufactured by the Mint has begun to fall reflecting the wider decline in the use of cash.** Coin production increased between 2012 and 2017 as the Mint issued new types of 5p, 10p and £1 coins. Since 2017, however, coin production levels have fallen rapidly to about 35% by volume of the amounts produced a decade earlier. In 2019-20 the Mint manufactured 383 million UK circulation coins, compared with nearly 1.1 billion in 2010-11 (paragraphs 3.3 and 3.4, and Figure 9).

19 **Although the use of cash in day-to-day transactions has fallen, the demand for notes has increased continuously over the past 20 years.** In July 2020 the number of notes in circulation reached a record high of 4.4 billion, with a monetary value of £76.5 billion. This compares with 1.5 billion notes worth about £24 billion in 2000. In 2018 the Bank estimated that only 20%–24% of the value of notes in circulation were being used or held for cash transactions, with UK households holding a further 5% as savings. Little is known about the remainder, worth approximately £50 billion, but possible explanations include holdings overseas for transactions or savings and possibly holdings in the UK of unreported domestic savings or for use in the shadow economy. However, the Bank and other government bodies have little reliable information to quantify how much is likely to be held where, or why the demand for notes is increasing. Over the past decade research has identified an increasing use of notes as a store of value across most of the world's major currencies, including the UK. Potential factors contributing to the demand are thought to include low inflation and interest rates, leading to increasing confidence in the real value and lower opportunity cost of holding cash, and also loss of confidence in banks following the 2008 financial crisis (paragraphs 1.4 and 3.19 to 3.21 and Figure 12).

HM Treasury and the Mint's oversight and management of coin production in the UK

20 **Forecasting coin demand is inherently challenging, reflecting fluctuations in consumer behaviour and the large volume of coins not in active circulation**. The Mint forecasts coin demand each year by estimating likely demand from the network of coin centres which serve banks and other financial institutions. However, coin demand from the cash centres has often varied significantly from the volumes forecast, sometimes abruptly, reflecting fluctuations in consumer behaviour and the ability of cash centres to anticipate requirements. For example, in 2017-18, an exercise to recall the old £1 coin led to an unexpectedly large return of coins of all denominations to cash centres as households and businesses emptied their stocks. In addition, HM Treasury-commissioned research in 2018 estimated that two-thirds of all issued coins were not in active circulation, and that there is little known about the factors that might prompt consumers to re-use their coin stores (paragraphs 3.5 to 3.7 and Figure 10).

21 As a result of both the impact of the 2017 £1 re-coinage exercise, and the rapid decline in coin demand, the Mint has built up significant excess stocks of coins. In 2019-20 HM Treasury required the Mint to keep a target buffer stock of around 11 weeks of annual demand for most denominations. However, in March 2020 stocks of coins exceeded the target buffers in all denominations: with holdings of 1p and 2p six and eight times above target respectively, and £2 coins 26 times over target. While the storage cost of the excess stocks is relatively small, the Mint's production of UK coins will be reduced over the next decade, as it balances maintaining production capability with steady stock reduction. In March 2020, the Mint did not plan to produce any new 2p or £2 coins for at least 10 years (paragraphs 3.8 to 3.10 and Figure 11).

22 The Mint continues to incur losses on its coin-making but has been taking action to improve profitability and efficiency. The Mint's coin-making activities made a loss of £3.9 million in 2019-20, compared with a loss of £13.1 million in 2018-19, and £4.3 million in 2017-18. Since 2018 the Mint has taken action to reduce cost and become more efficient. It has reduced headcount by 22% on coin-making work within its Currency division and mothballed two of its six plating lines. The average reduction in direct manufacturing cost per UK coin, excluding metal costs, has been approximately 23%. Despite these efforts, unit costs of UK coins have nevertheless increased by about 45% on average in three years. This has resulted from a combination of significant increases in metal prices, production of proportionately more coin denominations made of more expensive metal, and the fact that fewer coins were produced for some denominations pushing up marginal prices. The cost of making each 1p increased 69% between 2016-17 and 2019-20. The Mint's forecasts project that its currency operation (UK and overseas currency) may return to profitability by 2021-22, although the forecasts were prepared prior to the COVID-19 emergency (paragraphs 3.11 to 3.15).

Oversight and management of note production

23 Over the past four years the Bank has been replacing cotton paper notes with polymer notes, but it is too early to conclude if this change will meet the Bank's main objectives for the programme and also lead to savings. The Bank introduced the new £5 polymer note in October 2016, the £10 note in September 2017, and the £20 note in February 2020. Polymer notes are inherently harder to counterfeit and the Bank's polymer notes have extra security features, which together the Bank believes should strengthen resilience against counterfeiting. They are expected to last at least 2.5 times longer than paper notes. However, each polymer note costs 60% to 80% more to make than a paper note. The Bank has not formally assessed whether the replacement of existing paper notes with polymer notes will result in net costs or savings, although it did benchmark its cost calculations against a theoretical 'upgraded paper' replacement. Ultimately, the net cost or saving of polymer notes will largely depend on how much longer the new notes last (paragraphs 3.22 to 3.25).

24 **At March 2020 the Bank's contingency holding of notes significantly exceeded its minimum guidance levels, which was partly affected by the launch of the new £20 note.** The Bank forecasts the likely demand for notes but actual demand can depart significantly from expectations. To avoid shortages, the Bank sets out to hold contingency stocks of all notes. These contingency stocks are in addition to its normal bond stocks which are used to meet day-to-day and seasonal fluctuations in demand. Its minimum contingency stock in March 2020 was set at 11 months of annual demand for £5 and £10 notes, enough £50 notes to meet a spike in demand, for example such as that experienced in the 2008 financial crisis plus 50%, and enough £20 notes to meet six months of forecast demand for the new notes during its launch phase. In March 2020, contingency stock levels were above minimum levels for all denominations, with a total value of £39 billion, against its minimum contingency guidance level of £20.5 billion. The contingency stocks above minimum levels cost about £35 million to produce, before taking account of fixed costs, such as depreciation of machinery. It was not clear from the documentation shown to us what process the Bank operated to decide upon adequate stock levels, and how the cost implications of doing so were taken into account when building up stocks. The Bank considers the stock levels at March 2020 to have been prudent to remove any possibility of running out of notes, especially during the launch phase of the £20 polymer note, which accounted for more than half of the value of holdings above the minimum guidance levels (paragraphs 3.26 to 3.30).

25 **Efficiency of note production conducted under the contract with De La Rue has improved in recent years.** The Bank entered into the current 10-year contract with De La Rue in 2015. The Bank has an objective to promote the efficiency of note production, and it pursues this within the contract using two 'built-in' performance mechanisms, which each year gradually reduce allowable spoilage (that is, defective notes) and gradually increase utilisation rates of production machinery. De La Rue earns greater profits if it exceeds the tightening year-on-year targets, which it did for about half of the targets in the first five years of the contract. The resulting efficiency improvements from these arrangements have enabled unit cost reductions in note production of between 5% and 17% over the past four years (paragraphs 3.33 and 3.34, and Figure 14).

Reducing the risk of counterfeiting

26 Recent anti-counterfeiting work by both the Bank and the Mint is delivering improvements. Low counterfeiting rates help ensure the public have confidence in the use of cash:

- **The Bank** estimates that one in 10,000 notes are counterfeit, costing consumers and businesses about £10 million a year. This is higher than international comparators we have data for, for example it is three times the average in the eurozone. The Bank attributes this difference to counterfeiting in the UK having greater involvement from organised crime than in other jurisdictions. Indications so far are that £5 and £10 polymer notes, with new security technology, have reduced the incidence of counterfeiting of equivalent paper notes, although in early 2020 a small number of counterfeit polymer £10 notes were used successfully in some retail outlets. The real test for polymer's resilience to counterfeiting will be the new £20 as the traditional target note for counterfeiters.
- **The Mint** has taken action against previously high counterfeiting rates. In 2016 about one in every 30 £1 coins was a counterfeit. In developing a replacement, the Mint introduced new advanced security technology. Surveys since 2018 have found very low counterfeiting rates for the new £1 and other denominations (paragraphs 3.35 to 3.38 and figures 15 and 16).

Conclusion on value for money

27 The declining use of cash is placing increasing pressure on the sustainability of the infrastructure for producing and distributing cash. The current approach to overseeing the cash system is fragmented with no clear link between HM Treasury's overall objective of safeguarding access to cash for those who need it, the outcome that public bodies want to see and the costs associated with that outcome, and the responsibilities of the individual public bodies involved in the cash system. The creation of the coordination group has brought together the key public bodies and helped improve their understanding of the end-to-end cash system. They have been commissioning research to understand consumer needs, but they have yet to establish information systems to track the impact of a rapidly changing cash system on consumers, particularly for disadvantaged consumers whose needs may be greater. The government's recent announcement to introduce legislation with regard to access to cash, alongside other measures, may provide an opportunity to address some of the issues raised in this report.

28 The Mint and the Bank share similar objectives for the production of coins and notes but deliver against those objectives in very different ways. Both have been successful in maintaining public confidence in cash against the threat of counterfeiting. However, both have accumulated significant stocks of coins and notes in the face of very different patterns of demand. With the use of cash in transactions in rapid decline, and with the recent renewal of coins and note types now almost complete, the Mint and the Bank need to align their production operations much more closely to likely future needs if they are to demonstrate value for money.

Recommendations

29 We make the following recommendations:

a **HM Treasury should set out more clearly the specific outcomes it wants the cash system to deliver for consumers and small businesses and how this should be balanced against the costs of doing so.** It should review and where necessary amend the roles and responsibilities of participants in the cash system to ensure that individual responsibilities will, in aggregate, deliver the overall outcome.

b **HM Treasury should assign clear responsibility for bringing together and reporting information on how well the cash system overall is performing in meeting the government's policy objectives.** HM Treasury, working with the regulators, should develop a system for monitoring and reporting progress across the whole cash system. The system should include a better understanding of the impact of a changing cash system on:

- different groups in society and on different parts of the country; and
- businesses wishing to use cash and on trends in the acceptance of cash by businesses more generally.

c **HM Treasury, working with the public bodies and learning lessons from recent experience during the COVID-19 emergency, should have a plan in place to take action if some groups become left behind as the cash system changes.** The plan should include, for example, taking a more systematic approach to addressing some of the barriers that might lead to exclusion or detriment, raising awareness of the range of options for accessing cash and facilitating access to other payment methods.

d **The Mint and the Bank should maximise opportunities to learn from each other's experiences of cash production and work with the wider distribution system,** for example working closely with industry, and making best use of available production capacity.

e **The Bank, working with other public authorities, should improve its understanding of both the factors that are driving the increase in demand for notes, and also who is holding the approximately £50 billion worth of notes where there is currently a lack of information.** This work might help inform wider policy, for example on tax evasion.

f **The Bank should review its processes for deciding the appropriate level of contingency stocks** and ensure that the factors weighed in reaching those judgements, along with the associated cost implications, are brought together and fully documented.