SAFEGUARDING CONSUMERS' ACCESS TO CASH IN THE DIGITAL ECONOMY

Policy considerations and approaches

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Safeguarding consumers' access to cash in the digital economy

Amidst rapid digitalisation, many countries are increasingly moving towards 'cashless' or 'cash-lite' environments. While this development provides benefits for many, evidence indicates that it also raises risks for some consumers, especially those who may be vulnerable or who cannot—or prefer not to—transact digitally. This paper presents the impact of digitalisation on access to cash and summarises policies and measures enacted to ensure access to and acceptance of cash.

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Executive summary

In 2022, two-thirds of adults worldwide reported making or receiving payments through digital means, up from 44% in 2014. In line with this trend, cash infrastructure has reduced in many countries with the number of ATMs per 100 000 adults decreasing 13% between 2020 and 2022. Countries have noted that as cash infrastructure declines, certain groups of society are facing increasing barriers to accessing the payment system risking potential financial exclusion among other unintended consequences.

This paper presents the findings of recent research and policy discussions on the current trends in payment systems and country policies relating to access to and availability of cash, noting the potential risks of reduced access to cash. Incorporating recent policy developments related to consumer vulnerability and financial consumer protection, this paper highlights the importance of balancing digital growth and access to cash to maintain sustainable and inclusive payment systems.

Digitalisation and access to cash: A balancing act

As the payment infrastructure rapidly digitises, the costs of digital payments have decreased and, therefore, cash operators' preference for promoting digital payments has increased. The key catalysts for this digitalisation include governments trying to counter illegal money laundering and the financing of illicit payments, digitalisation's potential for promoting financial inclusion, and more recently, the effect of the pandemic on shifting consumers away from physical cash to avoid in-person contact.

However, due to higher usage of digital payments, countries face a decline in cash usage and, therefore, in access to cash. This decline has implications for financial consumer vulnerability and financial and economic exclusion with the number of access points for cash services decreasing, including ATMs and physical bank branches. Parts of society who are at a higher risk of facing barriers to digital payments due to a preference for cash or lower digital literacy, may be vulnerable to losing access to payment systems. There are several reasons for individuals to prefer cash over digital payments, including that cash provides consumers with a feeling of privacy and affords security during global outages caused by system failures or climate-change related hazards, among other things. Moreover, with the rising numbers of financial scams and frauds, consumers engaging with digital services are at a higher risk of falling a victim to these schemes. This sense of security can also be found in its role as a store of value to hedge against instability and uncertainty for consumers.

Governments respond with policy, legislative and regulatory initiatives

Governments have implemented policies and initiatives to address the possible and unforeseen impacts of digitalisation on access to cash. These policies and initiatives include national cash strategies; enforcing the acceptance of cash; ensuring its availability through legislative, regulatory, and industry-led initiatives; and expanding the regulatory and supervisory powers of oversight bodies regarding access to cash.

Further research is needed to examine the effectiveness of these policies in mitigating the potential and unintended consequences of the decline in access to and availability of the cash infrastructure.

Further research and monitoring are necessary

It is critical to acknowledge that different countries are experiencing different developments in their access to and usage of cash. Digitalisation in low- and middle-income countries is unfolding in a different stage of growth compared to high-income countries, representing an opportunity to boost financial inclusion and increase economic development. Even among advanced economies, trends in access to and usage of cash is unfolding differently. Nonetheless, the lessons and experiences from countries facing a decline in cash are—and will be—relevant in future policy discussions for a broad range of economies. Furthermore, it is important to note that while reduced access to and availability of cash currently poses the risk of financial exclusion, it is unclear whether this issue will be generational or fundamental; this will depend on how society adapts to further digitalisation and whether digital payments will be able to offer the relative advantages cash payments can only provide consumers with at present.

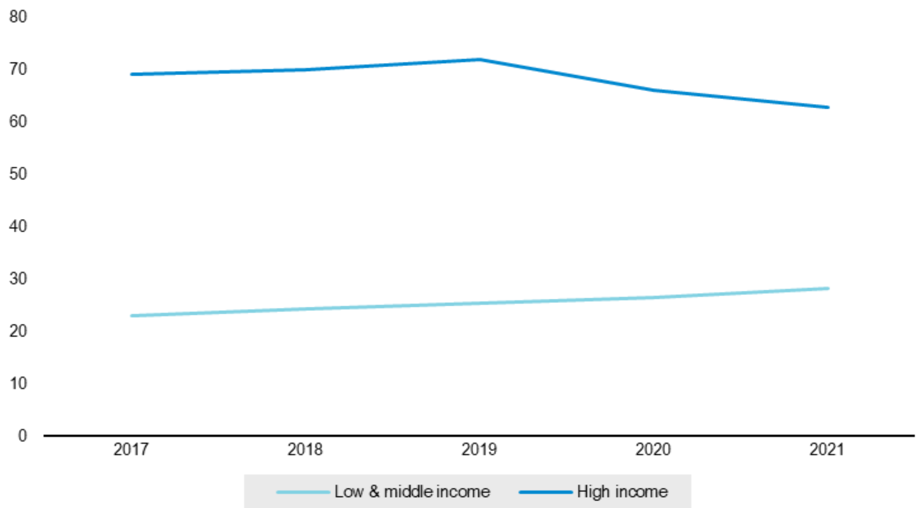
1 Policy context

1.1 General trends

1.1.1 Trends in payment services

Governments across the world have been supporting the digital transition, through encouraging the development of digital financial services, which can be defined as “financial operations using digital technology, including electronic money, mobile financial services, online financial services, i-teller and branchless banking, whether through bank or non-bank institutions” (OECD, 2017[1]). According to the most recent data, two-thirds of adults worldwide have reported using or receiving some form of digital payment, which includes mobile wallets, credit- and debit cards, contactless payments, and electronic transfers (Romig, 2022[2]). Conversely, global cash usage is now at 80% of its levels in 2019 and it continues to decline at about 4% each year (Bruno et al., 2024[3]). Furthermore, the cash infrastructure has been declining in many countries as banks have closed physical bank branches and ATMs in recent years. For example, data from the IMF indicates that cumulatively, despite opposing trends in low- & middle-income and high-income countries, the number of ATMs per 100 000 adults worldwide decreased by almost 13% between 2020 and 2022. Moreover, the total number commercial bank branches per 100 000 adults worldwide decreased by over 20% between 2020 and 2022.

Figure 1. Total number of ATMs per 100 00 adults (low- and middle-income vs high-income)

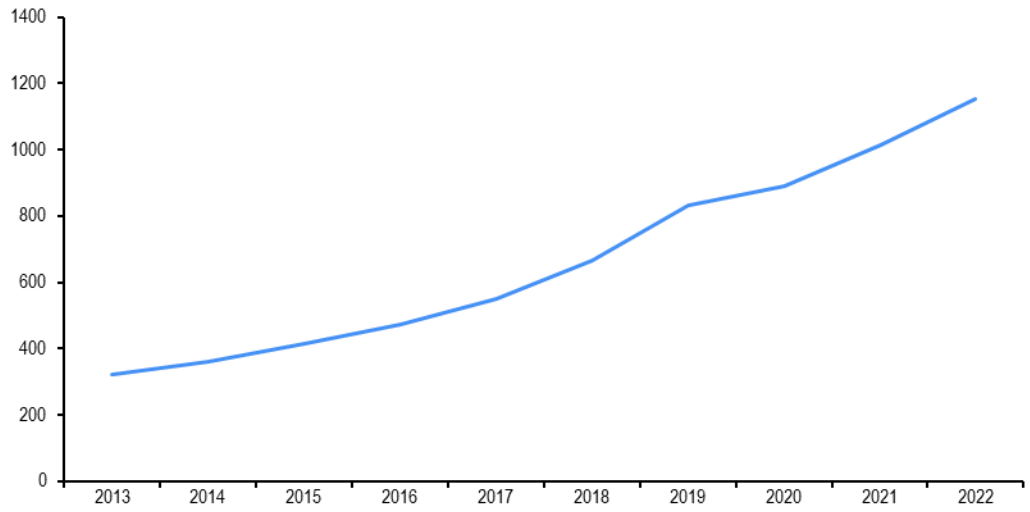


Note: The Financial Access Survey was launched by the IMF in 2009 and includes data from 189 countries spanning more than 15 years. Number of ATMs per 100,000 adults is one of nine indicators endorsed as the G20 Financial Inclusion Indicators and has been adopted to monitor the UN Sustainable Development Goals Target 8.
Source: Based on IMF Financial Access Survey 2023

1.1.2 Drivers of the digitalisation of payments

For most developed countries, the key drivers identified behind this digitalisation have been cost-efficiency, COVID-19, and the fight against illegal transactions (Dowd, 2019[4]). As the number of digital payments increased and the associated infrastructure developed, the cost of digital payments has fallen and made digital payments the preferred alternative to cash for many banks. Since the operations surrounding cash are relatively costly to banks and governments, digital payments provide an efficient, low-cost alternative (International Bank for Reconstruction and Development, 2014[5]).

Figure 2. Total number of cashless payments worldwide (in billions)



Note: The Bank for International Settlements (BIS) publishes statistics on payments and financial market infrastructures (FMIs) in member jurisdictions of the Committee on Payments and Market Infrastructures (CPMI). Widely known as the Red Book Statistics, they complement the descriptions of payment and settlement systems in CPMI jurisdictions.
Source: Based on Bank for International Settlements (BIS) Payment and Financial Market Infrastructure Statistics

Furthermore, the response to the COVID-19 pandemic accelerated the digitalisation of the payment system due to social distancing and lockdowns, shifting consumers from physical cash to digital and contactless payment instruments at unprecedented rates, with cash usage as a share of global payments decreasing by 20 percentage points between 2017 and 2022 (Bionducci et al., 2023[6]). For many years, cash has been the subject of attention by regulatory authorities and international bodies responsible for countering money laundering and the financing of illicit activities (FATF and MENAFATF, 2015[7]). Recently, in the fight against illegal transactions, countries across the globe have implemented cash thresholds, legal limits on the size of transaction for which cash can be used, or eliminating high-denomination notes (Sands et al., 2017[8]). For example, Spain has capped the maximum size of cash payments to EUR 1 000 to combat tax fraud (Banco de España, 2021[9]). Moreover, India withdrew their two highest-value banknotes from circulation in 2016 to limit the flow of illegal transactions (Anand and Kumar, 2016[10]). Singapore, similarly, stopped issuing their 10 000 Singapore dollar note in an attempt to curb money laundering (Armstrong, 2014[11]).

From a different perspective, digitalisation plays an important role in many developing countries in advancing financial inclusion (Jayawardana, 2022[12]). Financial inclusion is a key contributor to economic growth and sustainable development since it ensures participation of all citizens in the formal financial system. By adopting policies or facilitating private sector initiatives that expand digital means of payment, countries can provide their citizens with more tools to help them gain access to financial institutions and services at a lower cost. In Sub-Saharan Africa for instance, the digital transformation has been adopted widely, resulting in significant increases in financial inclusion (World Bank Group, 2024[13]). In Southeast Asian markets, where card penetration is relatively low, instant payments are also rapidly replacing cash as they are adopting digital means of payment (Bruno et al., 2024[3]). Through the digitalisation of government-to-person payments and remittances, for instance, individuals can easily transfer payments and access bank accounts, creating opportunities to engage with a variety of financial services (International Bank for Reconstruction and Development, 2024[14]).

The remainder of this policy paper focuses on experiences of countries that are facing a decline in access to cash and the resulting unintended risks of financial vulnerability and/or exclusion. It is important to note, however, that the dynamics in many developing economies, which are typically starting from much lower levels of financial inclusion (Park and Mercado, 2018[15]), are not the same as those of advanced economies with near universal access to financial products and services. The advancements towards digitalisation in low- and middle-income countries are unfolding in a different stage of growth and often represent an opportunity to boost financial inclusion and increase economic development. Similarly, the trends in access to and usage of cash are unfolding differently even among advanced economies. As evidence from the Bank of Canada indicates, in some economies cash and digital payments continue to coexist at the point of sale, without posing significant threats to the future of cash access (Welte et al., 2024[16]). Nonetheless, the lessons and experiences from countries facing a decline in cash are—and will be—generally relevant in future policy discussions for a broad range of economies.

2 Policy considerations

The digitalisation of payments has brought about many positive impacts including its cost-efficiency, and its impact as an important contributor to governments' abilities to counter illicit payment activities. As set out in the G20/OECD Policy Guidance on Financial Consumer Protection Approaches in the Digital Age, the benefits of digitalisation include extending the potential reach and access of financial services, fostering access to finance for businesses, increased convenience, more tailored products and services, and broadening the range of potential providers (OECD, 2018[17]). Digital payments have played a particularly significant role in expanding access to financial services and products in developing markets (World Bank Group, 2024[13]).

However, this trend also brings about unintended risks relating to consumer vulnerability, privacy and digital security risks, and the loss of cash as a store of value for consumers. These unintended risks highlight the importance of adequate financial consumer protection frameworks. As the international standard for comprehensive and effective financial consumer protection frameworks, the G20/OECD High-Level Principles on Financial Consumer Protection set out the elements of and underscore the importance of an effective and robust financial consumer protection framework (OECD, 2022[18]). Digitalisation is one of the Principles' cross-cutting themes. Alongside Principle 3: Access & Inclusion, Principle 6: Equitable & Fair Treatment of Consumers and Principle 10: Protection of Consumers Against Fraud, Scams & Misuse, it is important to consider the implications of digitalisation on consumers. This section highlights and elaborates on these risks to financial consumers.

2.1 Consumer vulnerability

Several countries, amidst the trend toward digitalisation, have observed that the consequential decline in usage of cash may have unintended consequences. Despite the majority of society having and being content with their access to payments systems, a 2023 study by the Dutch Central Bank showed that 28% of their sample indicate that they still cannot do without cash. Moreover, respondents to the study from groups at risk reported a relatively higher dependence on cash: 45% of respondents with low digital literacy, 36% of respondents with a disability and 35% of respondents with financial difficulties, indicated they cannot do without cash (van der Cruijsen and Reijerink, 2023[18]). Data from the Banco de España also indicates that cash was the usual payment method for 76% of people aged 65 and above, compared to 36% for young people between 25-34 (Barreiro, Ferrando and Posada, 2023[19]). Usage of cash is also negatively correlated with education levels: 74% of people with primary education use predominantly cash, compared with 44% of individuals with a university degree. Indeed, certain parts of society, including the elderly, lower-income groups, individuals with a disability, immigrants, and individuals with lower digital literacy, may be disproportionately affected by the rapid decline in cash usage as they may face barriers in adopting digital tools or prefer to use cash. These parts of society, generally, are more at risk of financially vulnerability as well, and the decline in the cash infrastructure risks further compounding the challenges they face.

As members of these groups may be more likely to experience financial vulnerability, policymakers have an interest in ensuring their access to tools and services, including cash and banking, that can support them. The report of the G20/OECD Task Force on Financial Consumer Protection on *Understanding and*

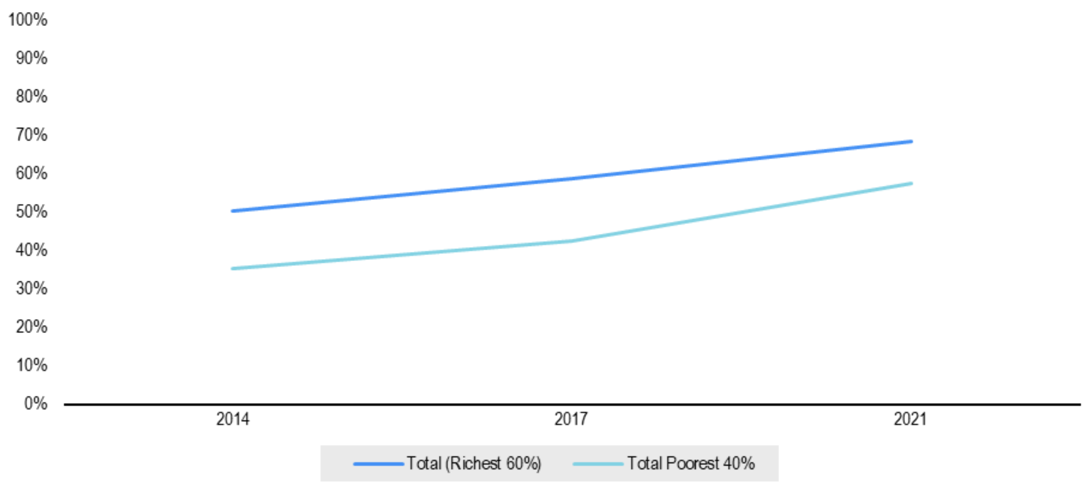
Responding to Financial Consumer Vulnerability, notes the reduced cash and banking infrastructure as potential negative contributors to vulnerability and the risk of financial exclusion (OECD, Forthcoming[20]). For example, in the eurozone alone, about 13.5 million people are unbanked and rely purely on cash to perform transactions. A larger number is *under*banked and lack sufficient access to financial services and resources to make the switch to digital payments (Zamora-Pérez, 2022[21]).

Not being able to pay with cash for individuals in vulnerable circumstances can compound financial disadvantages and lead to social and economic exclusion. For individuals belonging to some of the groups listed above, the barriers to adopting digital payments are higher than for other individuals. For example, most deposit accounts require identification that some individuals in vulnerable circumstances might not be able to provide (Lupo-Pasini, 2021[22]). Moreover, individuals with lower levels of digital literacy often do not have the means or resources to engage with digital financial services. And when they engage with digital financial services, they are at a higher risk of financial scams, fraud, and cyber-attacks. As is reported by the OECD/INFE international survey of adult financial literacy, two out of three adults who have been a victim of at least one type of financial scams do not reach the minimum target financial literacy score (OECD, 2023[23]).

Cash can also play an increasingly important role in budgeting for consumers (Skopeliti, 2023[24]), which is especially important in an environment of increased cost-of-living pressures. Especially for low-income households and individuals that are liquidity-constrained, cash provides a useful budgeting tool to monitor household finances (Hernandez, Jonker and Kosse, 2014[25]). Consumers find that they tend to spend less when using cash since there is more immediate monitoring and a low degree of freedom to exceed one's pre-set budget (Hernandez, Jonker and Kosse, 2014[25]). Furthermore, consumer survey data from the Netherlands shows that compared to cash, digital payments tend to hurt less psychologically, prompting consumers to overspend more frequently than when using cash (Broekhoff and van der Cruijsen, 2024[26]). In addition, digitalisation may exacerbate societal disparities as the use of cashless transaction significantly varies by income group, as shown in Figure 3.

Figure 3. Digital payments by income group

Percentage of digital payments made or received (by income group)



Note: The World Bank Global Financial Inclusion Database providers over 800 country-level indicators of financial inclusion. It covers more than 150 economies and is summarised for all adults and disaggregated by key demographic characteristics.
Source: Based on World Bank Global Financial Inclusion Database

2.2 Privacy & digital security risks

Consumers may perceive that cash has the advantage of higher levels of privacy about individuals' financial behaviour, whereas digital payments can be traced and tracked. Thus, cash is perceived to give consumers a notion of privacy, as well as a sense of autonomy and safety.

Furthermore, potential cybersecurity risks have led some countries to reconsider the move towards cashless payments. Due to increasing global instabilities, digital threats can risk leaving consumers vulnerable to cyber-attacks. For example, Sweden and Norway, countries that had been on track towards complete digitalisation of their payment systems, backtracked in 2024 over fears of national security threats. The Swedish Ministry of Defence issued brochures sent to every home in Sweden in November 2024, advising its citizens to use and stock cash and diversify their payment methods, while Norway passed legislation authorising fines and sanctions for retail shops that refuse cash in October (Bryant, 2024[27]). The Dutch Banking Association (NVB) also released a statement that they would issue advice in the start of 2025 on how to best handle one's financials in light of the geopolitical instabilities (Bergshoef, 2024[28]). This statement followed a report released by the Dutch Central Bank (DNB) highlighting how geopolitical tensions and higher risks of cyberattacks could destabilise payment systems (De Nederlandsche Bank, 2024[29]).

Additionally, digital defects and IT outages can cause digital payment systems to shut down, eliminating access to payment systems all together. Especially with the rise of climate change risks, power outages are becoming a more prominent topic of discussion, as floodings, forest fires, and storms cause power outages around the world. A report in 2022 found that in the US about 83% of the major outages could be attributed to extreme weather-events, which increased by 78% between 2011-2021 compared to 2000-2010 (Climate Central, 2022[30]). Cash, however, in situations of power outages, remains a resilient form of payment for all individuals.

Box 1. Global IT outage and payment disruption

On 19 June 2024, the world was struck one of the biggest IT outages ever, as companies globally using Microsoft Windows faced system failures. The global IT outage was attributed to a flaw in a software update from CrowdStrike, a security technology vendor (Hodgson et al., 2024[31]). CrowdStrike is one of the largest suppliers globally of a security software, called "endpoint security". This software protects connections between computer networks and devices such as laptops, cash terminals, and phones. The Chief Executive of CrowdStrike, George Kurtz, stated there was a defect found in an update for Windows and that it was not related to cybercrime or a security breach. Supermarkets, restaurants, airports, train stations, and banks were hit by the failure of Microsoft, which led to the grounding flights, and disrupted financial services and hospital systems (Tapper and Eretuyan, 2024[32]). Various companies and organisations were unable to accept digital payments as their digital platforms were down. The power outage highlights how a minor technical change can affect individuals across the globe, including their ability to make and accept payments. It also underscores the role of cash infrastructure in ensuring business continuity in times of digital upheavals.

2.3 Store of value

Cash is not only a form of payment, but it also offers utility as a store of value. Despite cash usage volumes decreasing, the cash in circulation has remained relatively stable due to an increase in its purpose of store of value (Khiaonarong and Humphrey, 2023[33]). Often, in times of uncertainty, individuals prefer holding cash rather than using it for making payments (Committee on Payments and Market Infrastructures, 2023[34]). Russia’s war of aggression against Ukraine has highlighted this role of cash, as proximity to the war boosted both foreign and domestic demand for euro cash (Beckmann and Zamora-Pérez, 2023[35]).

The geopolitical conflict of this scale has shown to have dramatically increased the demand for euro cash both from within and outside of the European Union. This trend is in line with the consideration that in times of uncertainty, precautionary demand of the cash of a currency increases, which can be attributed to lower confidence in the banking system.

If macroeconomic and geopolitical uncertainties increase, cash may prove to play an important role in more than just transactions. However, while the scope and importance of access to cash are an important part of protecting consumers, it is unclear whether this issue will be generational or fundamental; this will depend on how society will adapt to further digitalisation and whether digital payments will be able to provide the advantages that currently distinguish cash from other forms of payment.

3 Addressing access to cash through policy and regulation

As discussed above, with the rapid digitalisation of payment systems, an increasing number of countries have observed the unintended consequences of these trends. Countries are addressing these concerns through policies, regulations and other measures which can be grouped into four categories:

- National policies or strategies
- Enforcing the acceptance of cash as a form of payment
- Ensuring availability and provision of cash (including both legislative and regulatory initiatives as well as industry-led initiatives)
- Expanding the regulatory and supervisory powers of oversight bodies relating to access to cash.

These four categories are explored in more detail below including a table summarising the findings obtained from public sources via desk research followed by examples from a range of countries.

3.1 Policies, regulations and other initiatives to safeguard consumers' access to cash

3.1.1 Summary of examples of policies and regulations

Table 1 below summarises the findings of the desk research on country polices, regulations and other initiatives. A non-exhaustive range of country examples drawing from desk research of publicly available sources can be found below.

Table 1. Summary of country policies, regulations and other initiatives currently in place or under development (based on non-exhaustive desk research)

Country	National policies or strategies	Enforcing acceptance of cash	Ensuring availability and provision of cash		Expanded regulatory/ supervisory powers
			Legislative and regulatory initiatives	Industry-led initiatives, including self-regulation	
Australia	X	X			
Belgium		X			
China		X			
European Union		X			
France	X	X			
Finland	X		X		
Hungary			X		X
Ireland	X		X		X
Italy		X		X	
Latvia				X	
Lithuania				X	
Netherlands			X	X	X
New Zealand				X	
Poland	X				
Slovakia		X			
Spain		X	X	X	
Sweden			X		
United Kingdom	X		X	X	X
United States*		X			

* There is no Federal Law prohibiting businesses from refusing cash payments, but several state legislatures have adopted measures to enforce the acceptance of cash

3.1.2 National policies or strategies

In order to promote financial inclusion and ensure access to cash, a number of countries have pursued national policies or strategies to underpin the continual efficiency and resilience of the cash infrastructure. This includes guidelines for the cash infrastructure and ensuring the physical security of banknotes and coins. Often, these guidelines are based on a cross-sectional review of the cash infrastructure in the designated countries that offer insights into the gaps and challenges countries face in ensuring access to cash.

In the **United Kingdom,** the national cash strategy is coordinated through the Joint Authorities Cash Strategy (JACS) Group, consisting of the Financial Conduct Authority (FCA), HM Treasury, the Bank of England and the Payment Systems Regulator (PSR). These institutions have been working together to ensure regulatory activity supports the cash infrastructure to remain resilient, cost-effective, sustainable and able to meet the needs of consumers. The JACS Group also played an important role in the development of legislation and strategy to protect access to cash and to ensure that the members' respective regulatory responsibilities are aligned.

The FCA has also developed proposals under its powers granted through the Financial Services and Markets Act of 2023 (FSMA) (Office of the Parliamentary Counsel, 2023[36]), which is described in more detail below. Furthermore, in December 2023 the Treasury published a Cash Access Policy Statement, setting out the government's policy maintaining the distribution of cash services for personal and business accounts, which the FCA must refer to in ensuring reasonable access to cash (HM Treasury, 2023[37]). The Bank of England is also finalising codes of practice for overseeing the wholesale cash distribution market, but they have not yet been published.

Independent from the FCA, Treasury and the BoE, the organisation 'Access to Cash Review' examined the cash landscape in the UK in 2019 and provided key recommendations to be adopted by the British government in its national strategies (Ceeney, 2019[38]). These recommendations included: a government guarantee of access to cash, ensuring cash remains widely accepted, ensuring joined oversight and regulation, making digital payments available to everyone, and creating a more efficient and resilient cash infrastructure.

In **Ireland,** the Department of Finance published terms of reference for the proposed National Payments System (NPS) (Department of Finance, 2023[39]). This proposal was motivated by the Department of Finance's Retail Banking Review, published in 2022, which found that there had been significant changes in the Irish cash infrastructure since 2013. The proposed strategy sets out a roadmap for among other things, cash usage and how future changes should be made to the Access to Cash legislation to combat the declining cash infrastructure.

Despite relatively high access to cash figures compared to other European counterparts, **France** has launched an integrated governance model to create the National Payments Committee (NPC) (Banque de France, 2024[40]). The Committee is overseeing a review of all payment means, including cash, replacing two current bodies, namely the National Cashless Payments Committee (NCPC) and the Steering Committee for the Cash Industry (SCCI). They are building towards a unified strategy, converging the National Strategy for Cashless Payment Instruments (2019-2024) and the National Cash Management Policy (2019) (Banque de France, 2024[41]). Furthermore, since 2018, the Banque de France publishes yearly reports on public access to cash to document the trajectory of the cash infrastructure in France, based on the working group created in 2018 by the Cash Industry Steering Committee. Banque de France oversees the implementation and coordination of the current National Cash Management Policy, which defines acceptability, accessibility, quality, robustness, and efficiency as their main policy pillars.

The Central Bank of **Poland**, the Narodowy Bank Polski, launched a National Strategy for Cash Circulation Security in 2019 (Cash Circulation Council, 2021[42]), entrusted to their Cash Circulation Council. This council is an advisory body which consists of representatives from various sectors relating to cash circulation, such as market stakeholders and public institutions. The framework of the strategy included "universal acceptance and availability of cash, uninterrupted supply to the market, physical security of banknotes and coins, resilience of IT systems against cyber threats, and social communication activities" (Cash Circulation Council, 2021[42]). The strategy's objectives are based on a cross-sectional review of the access to cash conditions and measures that have been undertaken by the Central Bank in the operation of the cash circulation market. Its stated mission is to "promote further sustainable development of the cash circulation market while maintaining a high level of cash circulation security" (Cash Circulation Council, 2021[42]).

In a speech given by a member of the Board of **Finland**'s Central Bank, it was noted that Finland had seen a reduction in the supply of cash services (Finland's Bank, 2022[43]). This prompted the introduction of guiding principles on access to cash issued by the Central Bank. The guiding principles of the maintenance of cash services require banks to provide customers with the right to deposit and withdraw cash, to have cashback services in retail stores, the acceptance of cash as a means of payment, and address how small businesses should be treated equally as private consumers regarding using cash for payment (Finlands Bank, 2018[44]). In collaboration with the Finnish Payments Council and the Financial Supervisory Authority, the Central Bank of Finland will continue to support and promote these guiding principles to ensure the continuation of its cash infrastructure.

Australia's government recently published a strategic plan for their payments system (Treasury, 2023[45]). In accordance with this strategic plan, the government recognises the importance of cash for certain groups in Australia and their respective financial inclusion, and it lays out the current infrastructure and the future guidance to preserve cash as a form of payment. The Australian Government will monitor access to cash in close consultation with all relevant regulators. Furthermore, the Australian Department of the Treasury has started an engagement with federal government agencies and industries on maintaining a resilient cash infrastructure.

Also in Australia, the Senate Standing Committee on Rural and Regional Affairs and Transport undertook a deep dive into Australian banks closing their branches and issued a report on this in May 2024 (Rural and Regional Affairs and Transport References Committee, 2024[46]). The recommendations following this report included: adopting a policy recognising the importance and essence of access to financial services, ensuring reasonable access to cash and financial services; commissioning a panel to investigate the feasibility of public owned banks (using the branch network of the Australian Postal Corporation); developing a mandatory Banking Code of Conduct, including a specified branch closure process with regulators who are experts in consumer protection; and putting in place and enforcing policies to promote access to banking services in regional, rural and remote communities.

3.1.3 Enforcing acceptance of cash

Worldwide, countries' national currency has a status of acceptance, where consumers can use cash to perform their payments. But the extent of this status and acceptance of cash can vary in different countries due to limits on cash transactions, policies to encourage cashless transactions, and legal exemptions. Despite legal requirements in most countries for businesses and merchants to accept cash for transactions, this is not the case everywhere. As a result, several countries have recently developed or passed legislation to require businesses to accept cash as a form of payment.

Belgium passed a law confirming that retailers must not refuse cash payments (Ducarme, 2023[47]). The Bill was approved by the Federal Government in April 2023, and it protects the customers who lack the digital literacy, comfort with, or access to electronic payments or online banking. If a shopkeeper were to refuse a payment in cash, they would be sanctioned, unless there are safety concerns indicated well in advance of the payment, for example, a suspicion of illegal money being used or the transaction in question is over EUR 3 000.

In June 2024, the Parliament of **Australia** introduced the Keeping Cash Transactions in Australia Bill 2024 (Gee, 2024[48]), but it was not enacted. The Bill came as a response to the Reserve Bank of Australia's consumer payments survey in 2022 highlighting an ongoing decline in cash use (Livermore et al., 2023[49]). This raised concerns regarding the acceptance of banknotes or coins in Australia, especially in the absence of a legal requirement for cash to be accepted as long as businesses make customers aware before the transaction takes place. Moreover, the Australian Treasury completed a consultation process in February 2025 on mandating businesses to accept cash when selling essential goods and services, with some exemptions for small businesses (Treasury, 2024[50]). The government stated that it intended to implement this mandate by 2026.

In 2018, the People's Bank of **China** (PBoC) announced a crackdown on businesses refusing to accept cash as a payment (People's Bank of China, 2018[51]). As part of their efforts, the PBoC clarified the legal tender status of the Renminbi and strengthened relevant policies and guidance. More recently in 2024, the People's Republic of China (hereafter 'China') fined seven businesses for rejecting cash payments (Na, 2024[52]). These fines were levied against both the businesses and the individuals involved. The State Council also issued a guideline to optimise payment services in China to ensure the acceptance of cash (The State Council, 2024[53]). To follow the requirements stipulated in this guideline and to meet the diversified payment needs of various groups in society, the PBoC, the Ministry of Culture and Tourism, the State Administration of Foreign Exchange and the National Cultural Heritage Administration issued a Notice on further optimising the payments services at key cultural and tourism venues (State Administration of Foreign Exchange (SAFE), 2024[54]).

Under their Currency Act of 2011, Bank **Indonesia** is tasked with safeguarding the use of cash. This Act states that merchants must accept the Rupiah as a legal means of payment. More recently, Bank Indonesia has emphasised that merchants cannot exclusively rely on digital payment methods to ensure that consumers retain the right to choose cash as a form of payment in any transaction.

By Royal Decree in 2021, under the General Law for the Protection of Consumers and Users, retailers are obligated to accept cash payments in **Spain** (Posada Restrepo, 2021[55]). This law entered into force in May of 2022 and has deemed refusal of cash a minor offense and a violation of Spanish law. If the circumstances cause serious, unjust, and unforeseeable social disturbances, this minor offense can be upgraded to a more severe violation of the law. The Spanish government enacted the law to protect vulnerable groups of society and ensure that the use of cash remains a fundamental right. In the context of legislative efforts to prevent and combat tax fraud, Spain passed a law in 2023 requiring that tenants make rental payments electronically. However, the law includes an exemption for cases in which the tenant or owner does not have a bank account or access to electronic payments.

Several state legislatures in the **United States** have adopted measures to maintain access to cash. The states of New York, New Jersey, North Carolina, Ohio, Oklahoma, South Carolina, Tennessee, California, Colorado, Virginia, Massachusetts, Rhode Island, Pennsylvania, and Michigan have all adopted some form of pro-cash legislations (Loomis United States, 2023[56]). These policies include requiring retailers to accept cash as payment, not charging higher prices when paying with cash, and prohibiting cashless policies. In recent sessions of the United States Congress, legislators introduced the Payment Choice Act (Payne, 2023[57]), but the bill has not yet become law. If enacted, this Act would allow consumers to retain the right to use cash for payments, similar to existing state laws.

Registering one of the largest declines in cash usage between 2019 and 2022 according to the SPACE study conducted by the European Central Bank (European Central Bank, 2020[58]), **Slovakia** passed a new amendment to the constitution in 2023 protecting the future of cash payments. The amendment stipulates that every citizen has the right to use cash for the purchase of goods and services. The amendment was passed to protect low-income households, who generally tend to use cash with higher frequency in payments. Certain exemptions, such as for security or technical reasons, allow retailers to refuse cash payments under this amendment.

As a part of the National Cash Management Policy (Banque de France, 2024[41]), the Central Bank of **France** has been responsible for ensuring the acceptance of cash across France. In France, it is a criminal offense to refuse cash payment in any type of transaction, with some exceptions. As the Banque de France explains: “Euro banknotes and coins must therefore be available to the public at all times and universally accepted, as they are often the only means of payment possible for the most financially vulnerable.”

Within the **European Union**, only euro banknotes and coins have the status of legal tender. According to Article 11 of “Regulation EC/974/98” and as confirmed in 2021 by the European Court of Justice, this legal tender status entails that there is a mandatory acceptance of cash with the power to discharge from a payment obligation (European Commission, 2023[59]). In June of 2023, the European Commission also adopted a proposal on this legal tender status to ensure the continued physical access to the euro across the EU (European Commission, 2023[59]). This proposal sets out what the legal tender status means, the rules for the acceptance of cash, and exceptions to it. It also sets out guidelines for member states on how to achieve universal access to cash.

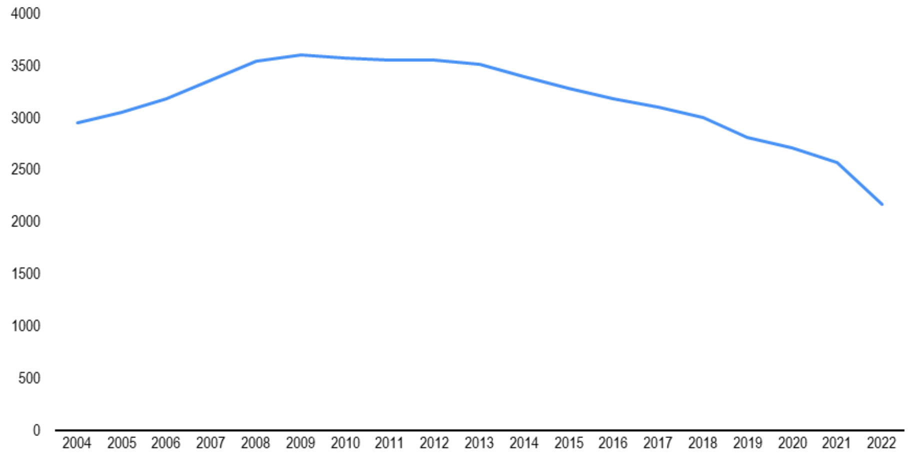
3.1.4 Ensuring availability and provision of cash

A significant consequence of digitalisation of payments is that bank branches and ATMs have closed at unprecedented rates (International Monetary Fund, 2023[60]). This further impacts the availability of the cash infrastructure, often requiring individuals living in rural areas to travel further distances to withdraw or deposit cash.

A 2024 report of the Consumer Financial Protection Bureau (CFPB) in the United States also highlights a widely occurring phenomenon, namely "cash-back fees" (Offices of Consumer Populations and Markets, 2024[61]). Due to the decline in the cash infrastructure, retailers provide the cash services that banks previously provided, which has resulted in retailers charging high cash-back fees that can be levied on low pre-set cash withdrawals. These cash-back fees also occur in areas where there are fewer branch locations and where communities are generally more reliant on cash, further exacerbating the negative consequences of branch and ATM closures.

Several countries have enacted initiatives and policies to counteract these branch and ATM closures. Such initiatives can take the form of legislative/regulatory initiatives (e.g., requiring banks to provide cash services) or industry-led initiatives (e.g. launching partnerships with non-bank organisations to supply further cash facilities).

Figure 4. Total number of commercial bank branches per 100 000 adults



Source: Based on IMF Financial Access Survey 2023.

Legislative and regulatory initiatives

To address the physical cash services that reached record lows, **Sweden,** under the Payment Services Act, required the six largest banks in the country to provide withdrawal services for private individuals. These banks are also required to accept receiving deposits from companies and organizations (Sveriges Riksbank, 2022[62]). As a part of the Payment Services Act, credit institutions and branches of foreign credit institutions are required to provide basic cash infrastructure, such as being able to withdraw cash from their payment accounts (Ministry of Finance, 2010[63]). Following a deterioration in the Swedish cash infrastructure, this Act was extended in 2021 to include stricter information requirements on the provision of cash services. Banks' compliance with these standards is monitored by the Swedish post and Telecom Agency. If banks were to fail to respect the standards, they could incur a penalty fee and an injunction.

Banks in **Finland,** under its Credit Institutions Act, have a legal obligation to provide customers with cash withdrawal and deposit opportunities (Finlands Bank, 2018[44]). In line with the Central Bank's guiding principles, these institutions need to provide services that allow citizens to achieve their daily wellbeing needs. To strengthen the cash infrastructure, the Central Bank also proposed a new legislative proposal in 2022 which would promote the acceptability of cash as a means of payment and to withdraw cash free of charge.

The **Netherlands** has proposed regulation aiming to keep cash accessible through their Cash Payments Act (CPA) (Nederlandse Overheid, 2024[64]). The Netherlands has seen a sharp decline the access to cash services in the past years, one of the largest declines in the Euro Area according to the ECB's SPACE study. The Act is an amendment of the Dutch Financial Supervision Act, the Banking Act 1998, and the Financial Supervision Funding Act in 2019 regarding the functioning of cash payments. This bill requires large banks to provide a basic cash infrastructure of ATMs nationwide, obliging banks to offer payment account holders access to cash services. It stipulates that the majority of the transport of cash will be done by a single service provider. The bill would also mandate banks that have a minimum of 50 000 account holders to contribute to the access to cash infrastructure. The ECB issued advice on this regulation based on the request of the Dutch Ministry of Finance, who voiced support to the regulation and deemed it compatible with the European Union's mission to ensure the continual access to cash.

Motivated in part by the recommendations issued by the independent Access to Cash Review organisation, the **United Kingdom** adopted the Financial Services and Markets Act (FSMA) in 2023 (Office of the Parliamentary Counsel, 2023[36]). The Act introduced a legal framework to protect access to cash services throughout the UK. The Act is part of a larger national strategy to maintain cash infrastructure in the UK. Additionally, LINK, responsible for the ATM network in the UK, under the new rules the FCA has implemented as a part of their broadened regulatory power. is the designated coordination body responsible for carrying out cash access assessment. This has allowed the FCA and LINK to build on the previously voluntary scheme and put it on a regulatory footing.

In **Ireland,** legislators published the Access to Cash General Scheme in January 2024 and introduced the Finance (Provision of Access to Cash Infrastructure) Bill in July 2024. Following the Retail Banking Review, published by the Department of Finance in 2022, the introduction of this legislation has been a priority for the government of Ireland (Ministry of Finance, 2024[65]). The Bill seeks to maintain the resilience of the cash system in Ireland. It introduces regulations that put ATM deployers and companies that transit cash under the supervision of the Central Bank of Ireland. Further details regarding the Central Bank's expanded supervisory responsibilities are discussed in more detail in the section below.

As part of the legislation to protect vulnerable people, the Congress in **Spain** passed a law in 2022 on the protection of consumers and users in situations of social and economic vulnerability, to promote coordination with banking entities with the aim of favouring the inclusion of the most vulnerable people, especially the elderly. Among these measures, this legislation seeks to improve the accessibility of ATMs, prevent the closure of ATMs when a bank branch closes, and promote the use of simple technologies for access to banking services.

To ensure the population's uninterrupted access to cash, the Central Bank of **Hungary** issued a new Banknote Decree in February 2023, which defines the minimum size of the ATM network of credit institutions, the distribution between settlement types, and the conditions for restricting or terminating bank branches. The regulation sets the number of ATMs to be operated by credit institutions primarily on the basis of the number of payment cards with cash functionality issued by the given credit institution. Based on this indicator, the Central Bank defined four categories, and for each category it sets an expected average number of ATMs available for each of three defined groups of settlements (districts of the capital, country seats, or other settlements in the country). In addition, the regulation also mandates that major card-issuing credit institutions must operate ATMs in a specified number of urban settlements. The Decree defines the conditions under which the credit institution may close cash desks within its bank branches, which includes the cash turnover trends, expansion of the ATM networks, and the obligation to inform consumers.

Industry initiatives, including self-regulation

In order to assess how to best ensure access to cash services are available in small rural towns, the Reserve Bank of **New Zealand** is undertaking research in the form of Community Cash Service Trials (Nilsen and Northcote, 2024[66]). The trials aim to explore the cost and feasibility of relying on bank specialist firms, such as cash handling and cash security firms, to provide to local retailers and service groups the cash services previously provided locally by banks (depositing cash, dispensing cash, and supplying low denominations needed for 'change'). Further, the trials will explore the cost and feasibility of remunerating retailers to provide cash withdrawals to customers (including low denominations). Together these interventions are designed to support ongoing access to, and acceptance of, in trial towns. Three different 'multi-bank' machine-based solutions will be trialled for meeting retailers' cash deposit and cash change needs. 'Multi-bank' refers to the machine-based service where transactions can be routed to multiple banks – something which is largely missing in the New Zealand market. One of the service options includes the local 'recycling' of cash whereby cash deposited locally is dispensed locally (after being quality checked via the dispensing device), thereby potentially reducing the carbon emissions needed to ensure a viable cash system. Town selection has concluded, and the trials will take place in nine towns across New Zealand. The trials are due to begin in February 2025 and will run for a minimum of 12 months.

Extending their Memorandum of Understanding, commercial banks in **Lithuania** and the Association of Lithuanian Banks signed a contract with Worldline, an advanced payments technology provider, to ensure the availability and accessibility of cash in June of 2021 (The Bank of Lithuania, 2021[67]). The purpose of the Memorandum was to establish minimum criteria for the availability of cash services, such as withdrawals and deposits. Under this memorandum, a group of banks operating in Lithuania undertook initiatives to expand cash infrastructure and improve access conditions. They installed 100 ATMs across Lithuania across 40 municipalities of which 250 000 residents can now make use. They managed to increase the number of residents that can access the nearest cash point within 10 kilometres by 9% between its implementation and 2022.

Similarly, **Latvia**, in cooperation with Finance Latvia Association and banks operating in Latvia, has implemented measures ensuring access to cash (Latvijas Banka, 2021[68]). Initially included in the Memorandum of Cooperation in 2021, the market participants agreed to continue implementing these measures in 2024. The measures include preserving the ATM network by making sure every municipal centre has at least one ATM and preserving their identified set of critical ATMs. Furthermore, the measures include ensuring adequate accessibility of said ATMs to consumers.

Recognising the decline in the availability of cash though ATM withdrawals, three large banks in **the Netherlands** collaborated on a joint ATM network to keep cash available, affordable, and accessible (Dutch Payments Association, 2021[69]). ABN Amro, ING, and Rabobank gradually transferred their ATMs, coin deposit/withdrawal machines and bill deposit machines to Geldmaat, which continued the rollout of its ATM network.

As a part of its financial inclusion initiative to protect the elderly, the banking associations, the Banco de España (Bank of Spain) and the Ministry of Economic Affairs and Digital Transformation in **Spain** signed an update of the Strategic Protocol to Strengthen the Banking Sector's Social and Sustainable Commitment in 2022, to include measures to promote the inclusion of the most vulnerable groups (Asociación Española de Banca, 2022[70]). The protocol includes an effort to ensure the supply of cash through repairing ATMs that were previously out of service and providing geolocations of all existing ATMs. Furthermore, it would extend the number of face-to-face services and fast telephone customer service for vulnerable groups, particularly for the elderly.

The Post Office in **the United Kingdom** signed an agreement with a group of banks and building societies to provide cash withdrawal services, as well as basic banking facilities. The operation was renewed in 2023 and anticipated to run until the end of 2025. Furthermore, the network responsible for most ATMs in the

UK, LINK, is undertaking reviews of the access to cash in UK communities, where these communities believe they are being underserved (Hall et al., 2022[71]). These reviews have resulted in several reports which are used to help improve cash infrastructure in the UK.

3.1.5 Regulatory and supervisory powers

Countries have also expanded regulatory and supervisory powers for the relevant bodies, such as central banks or financial conduct authorities, to issue rules to maintain the cash infrastructure and ensure compliance. This can include expanding oversight of the relevant institutions, as well as expanding powers to draft new rules or general guidance relating to the regulation of banks and other institutions involved in the handling and processing of cash.

Under the Financial Services and Markets Act of 2023, the regulatory power of the Financial Conduct Authority in the **United Kingdom** was expanded (Office of the Parliamentary Counsel, 2023[36]). The UK Parliament asked the FCA to ensure access to cash through maintaining a network of cash services and facilities so that people reliant on cash for payments can withdraw and deposit cash. The FCA is tasked with monitoring coverage of access to cash and drafting new rules or general guidance relating to regulation of cash access. The FCA's proposed rules relating to the cash retail and wholesale regimes came into force in September 2024. These regulations introduce requirements for banks and building societies relating to access to cash, such as conducting a local cash assessment to evaluate whether additional services are required, and whether there is sufficient access to cash across the UK. The FCA will work together with the Bank of England and the Payment Systems Regulatory (PSR) which oversees the largest ATM network in the UK, LINK. The PSR is charged with payment systems, ensuring that users of payment services' needs are met. Under the Act, the Bank of England also saw an expansion of their oversight, now being responsible for overseeing the wholesale cash distribution market to ensure the sustainability of the cash infrastructure in the UK. This will allow the FCA and BoE to monitor coverage of cash infrastructure and ensure that, if necessary, firms will have to fill the gap created by their branch closures.

Oversight was also expanded for the Central Bank of the **Netherlands**, De Nederlandsche Bank (DNB) (Nederlandse Overheid, 2024[64]). Under the Cash Payments Act, signed by the Minister of Finance, the DNB will be charged with supervising the compliance with the rules and regulations put forth in the bill. Previously, the DNB's mandate comprised promoting the safety, efficiency, reliability, and accessibility of the Dutch payment system, but their role will now grow to ensure access to cash obligations are being respected.

As a part of their access to cash bill proposed in 2024, **Ireland** granted its Central Bank responsibility for setting the criteria for access to cash (Ministry of Finance, 2024[65]). These criteria relate to the number of ATMs per 100 000 people, the minimum proportion of the population that live within a specified radius of ATMs and cash service points in each region, and oversight of Cash in Transit (CIT) and ATM providers. ATM and CIT providers will also be obliged to register with the Bank, as a part of the Bank's responsibility to maintain sufficient levels of cash and supervise the cash infrastructure. Furthermore, the Minister for Finance will be responsible for setting a threshold of the market share of current accounts and household deposits deposit-holding entities can hold to ensure they maintain adequate cash reserves. The Central Bank will be responsible for the monitoring and enforcement of the legislation and will have the necessary powers to ensure compliance with the access to cash criteria. The monitoring will occur on a quarterly basis, the Central Bank will conduct regular reviews of the core criteria and also prepare a report for the Minister who may amend the criteria by regulation.

4 Conclusions

The digitalisation of payment services is progressing in countries around the world, with increasing numbers of individuals using or receiving some form of digital payments. As digital payments increase and the associated infrastructure further develops, the costs of digital payments fall, making it increasingly preferable to cash for payment operators. The key drivers behind this digitalisation include the pandemic shifting consumers from physical cash to payments requiring less in-person contact, governments trying to counter illegal money laundering and the financing of illicit activities, as well as the potential for digital payments to promote financial inclusion, especially in developing markets. For instance, by expanding the digital payment infrastructure, consumers have more tools to help them gain access to financial services and products at a lower cost.

However, as a result of the increase of digitalisation of payments, countries face a decline in access to cash, with implications for financial consumer vulnerability and financial and economic exclusion. The number of access points for cash services, including ATMs and physical bank branches, are decreasing. This can result in unintended effects on parts of society, including elderly, lower-income groups, individuals with a disability, immigrants and individuals with lower digital literacy rates who are more likely to face barriers in adopting digital payments or prefer to use cash. Individuals can prefer cash over digital payments since digital payments require identification and cash allows consumers to have a notion of privacy. Moreover, consumers engaging with digital services are at risk of being impacted by financial scams and frauds or geopolitical security threats through cyberattacks. Global outages, either through system failures or climate-change related risks, also highlight the role that cash can play in times of crisis. Finally, cash represents a store of value for consumers, as a hedge against risk and instability in times of uncertainty.

Governments have adopted and developed policies and initiatives to mitigate the potential and unintended consequences of the digitalisation of payments. These measures can be grouped in four categories, as described in the previous chapter: implementing national cash policies or strategies; enforcing the acceptance of cash as a form of payment; ensuring the availability and provision of cash through legislative and regulatory, as well as industry-led initiatives; and expanding the regulatory and supervisory powers of oversight bodies relating to access to cash. Further research is needed to evaluate the impact of these measures to determine their impact and whether they are sufficient in maintaining access to the cash infrastructure. Countries may also consider ongoing monitoring of consumers' access to cash. Such monitoring should include disaggregated demographic data, as global trends can mask significant heterogeneity in the experiences of different types of consumers.

It is important to note that as the digitalisation of payments evolves, further policy responses will depend on whether digitalisation will be able to adapt to provide the relative advantages that cash currently provides.

As the topic of financial consumer vulnerability is a priority for policymakers worldwide, the Working Party on Financial Consumer Protection, Financial Education and Financial Inclusion will continue to discuss the evolving role of digitalisation in global payment systems, including its effects on cash availability and acceptance and the implications for financial consumer protection policies and approaches.

References

Anand, G. and H. Kumar (2016), “Narendra Modi Bans India’s Larges Currency Bills in Bid to Cut Corruption”, *New York Times*. [10]

Armstrong, R. (2014), “Singapore to stop issuing 10,000 banknote to prevent money laundering”, *Reuters*. [11]

Asociación Española de Banca (2022), *Documento de firma de la actualización del Protocolo Estratégico para Reforzar el Compromiso Social y Sostenible de la Banca*, Asociación Española de Banca. [71]

Banco de España (2021), *Law 11/2021, of 9 July 2021, on measures to prevent and combat tax fraud*. [9]

Bank of Ghana (2021), *Summary of Economic and Financial Data*, Bank of Ghana. [80]

Banque de France (2024), *Discover the National Payments Committee (CNMP)*, Banque de France. [41]

Banque de France (2024), *National Cash Management Policy*, Banque de France. [42]

Barreiro, L., L. Ferrando and D. Posada (2023), *Cash use, access and acceptance in Spain: An analysis drawing on the 2023 Study on Cash Use Habits*, Banco de España. [20]

Beckmann, E. and A. Zamora-Pérez (2023), *The impact of war: extreme demand for euro cash in the wake of Russia’s invasion of Ukraine*, European Central Bank. [36]

Bergshoef, L. (2024), “Hoeveel cash is verstanding (en veilig) om in huis te bewaren? En nog drie vragen over het nieuwe advies”, *NRC*. [29]

Better than Cash Alliance (2024), *Better than Cash Alliance: Defining Digital Payments*, Better than Cash Alliance. [79]

Bionducci, L. et al. (2023), *2023 Global Payments Report*, McKinsey. [6]

Broekhoff, M. and C. van der Cruijsen (2024), “Paying in a blink of an eye: it hurts less, but you spend more”, *Journal of Economic Behavior & Organization*, Vol. 221, pp. 110-133. [27]

Bruno, P. et al. (2024), *Global payments in 2024: Simpler interfaces, complex reality*, McKinsey & Company. [3]

Bryant, M. (2024), “Sweden and Norway rethink cashless society plans over Russia security fears”, *The Guardian*. [28]

Cash Circulation Council (2021), *National Strategy for Cash Circulation Security Summary*, Narodowy Bank Polski. [43]

Ceeney, N. (2019), *Access to Cash Review*, Access to Cash Review. [39]

Climate Central (2022), *Surging Power Outages and Climate Change*, Climate Central. [31]

Committee on Payments and Market Infrastructures (2023), *Digital payments make gains but cash remains*, Bank of International Settlements. [35]

Committee on Payments and Market Infrastructures (2021), *Covid-19 accelerated the digitalization of payments*, Bank of International Settlements. [75]

Crowley, T. (2024), “Federal government to require businesses to accept cash for fuel, groceries”, *Australian Broadcasting Corporation (ABC)*. [73]

De Nederlandsche Bank (2024), *Financial Stability Report - Autumn 2024*, De Nederlandsche Bank. [30]

Department of Finance (2023), *National Payments Strategy 2024 Terms of Reference*, Department of Finance Ireland. [40]

Dowd, K. (2019), “The war on cash is about much more than cash”, *Economic Affairs, Wiley Blackwell*, Vol. 39/3, pp. 391-399. [4]

Ducarme, D. (2023), *Wetsvoorstel tot wijziging van het Wetboek van economisch recht, ter verankering van het recht van de consument om met contant geld te betalen*. [48]

Dutch Payments Association (2021), *Annual Report 2021*, Dutch Payments Association. [70]

England, T. (2024), *The Bank of England’s approach to enforcement: proposed changes to statements of policy and procedure following the Financial Services and Markets Act 2023*. [78]

European Central Bank, E. (2020), *Study on the payment attitudes of consumers in the euro area (SPACE)*, European Central Bank, Frankfurt. [59]

European Commission (2023), *Proposal for a Regulation of the European Parliament and of the Council on the legal tender of euro banknotes and coins*. [60]

FATF and MENAFATF (2015), *Money Laundering Through the Physical Transportation of Cash*, FATF and MENAFATF. [7]

Finlands Bank (2018), *Annual Report 2018*, Suomen Pankki, Finland’s Bank. [45]

Finland’s Bank (2022), *Bank of Finland proposes new regulation on cash services*, Suomen Pankki, Finland’s Bank. [44]

Gee, H. (2024), *Keeping Cash Transactions in Australia*. [49]

Hall, M. et al. (2022), *The Cash Census: Britain’s Relationship with Cash and Digital Payments*, Royal Society for Arts and LINK. [72]

Hernandez, L., N. Jonker and A. Kosse (2014), *Cash versus debit card: the role of budget control*, De Nederlandsche Bank. [26]

HM Treasury (2023), *Cash Access Policy Statement*, United Kingdom Government. [38]

Hodgson, C. et al. (2024), “What caused the huge global IT outage?”, *Financial Times*. [32]

International Bank for Reconstruction and Development (2024), *Annual Report G2Px 2023*, The World Bank Group. [14]

International Bank for Reconstruction and Development (2014), *The Opportunities of Digitizing Payments*, The World Bank, Better than Cash Alliance, and Bill & Melinda Gates Foundation. [5]

International Monetary Fund (2023), *IMF Releases the 2023 Financial Access Survey Results*, International Monetary Fund. [61]

Jayawardana, P. (2022), *Expanding Financial Inclusion Through Digital Innovations*, Asian Development Bank (ADB). [12]

Khiaonarong, T. and D. Humphrey (2023), *Measurement and Use of Cash by Half the World’s Population*, International Monetary Fund. [34]

Latvijas Banka (2021), *Memorandum of Cooperation on Ensuring Access to Cash for Residents of Latvia*, Latvijas Banka. [69]

Livermore, T. et al. (2023), *The Evolution of Consumer Payments in Australia: Results from the 2022 Consumer Payments Survey*, Reserve Bank of Australia. [50]

Loomis United States (2023), *Pro-Cash Legislation Database*, Loomis United States. [57]

Lupo-Pasini, F. (2021), “Financial Inclusion and the ’War for Cash’”, *Law and Contemporary Problems*, Vol. 84/1. [23]

Lupo-Pasini, F. (2021), “Is it a Wonderful Life? Cashless Societies and Monetary Exclusion”, *Review of Banking and Financial law*, Vol. 40/1. [76]

Ministry of Finance (2024), *Access to Cash Bill 2024*. [66]

Ministry of Finance (2010), *Payment Services Act*. [64]

Na, Q. (2024), “China fines KFC franchise, others for rejecting cash payments”, *Nikkei Asia*. [53]

Nederlandse Overheid (2024), *Wet Chartaal Betalingsverkeer*, Nederlandse Overheid. [65]

Nilsen, K. and P. Northcote (2024), *Community Cash Service Trials Webinar*, Reserve Bank of New Zealand. [67]

OECD (2023), *OECD/INFE international survey of adult financial literacy*, OECD, https://doi.org/10.1787/56003a32-en. [24]

OECD (2022), *Recommendation of the Council on High-Level Principles on Financial Consumer Protection*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0394. [18]

OECD (2018), *G20/OECD Policy Guidance on Financial Consumer Protection Approaches in the Digital Age*, https://doi.org/10.1787/3f205e60-en. [17]

OECD (2017), *Ensuring financial education and consumer protection for all in the digital age*, OECD Publishing, https://doi.org/10.1787/56003a32-en. [1]

OECD (Forthcoming), *Understanding and responding to financial consumer vulnerability*, OECD. [21]

Office of the Parliamentary Counsel (2023), *Financial Services and Markets Act*, Government of the United Kingdom. [37]

Offices of Consumer Populations and Markets, C. (2024), *Cash-back Fees*, Consumer Financial Protection Bureau. [62]

Park, C. and R. Mercado (2018), *Financial Inclusion: New Measures and Cross-Country Impact Assessment*, Asian Development Bank. [15]

Payne, D. (2023), *Payment Choice Act of 2023*. [58]

People's Bank of China (2018), *Announcement No.10 on Cracking down on the Act of Refusing to Accept Cash Payment*, The People's Bank of China. [52]

Posada Restrepo, D. (2021), *Cash Infrastructure and Cash Access Vulnerability in Spain*, Banco de España. [56]

Romig, S. (2022), *COVID-19 Drives Global Surge in use of Digital Payments*, World Bank Group. [2]

Rural and Regional Affairs and Transport References Committee (2024), *Bank Closures in Regional Australia, Protecting the Future of Regional Banking*, The Senate of Australia. [47]

Sands, P. et al. (2017), "Limiting the Use of Cash for Big Purchases: Assessing the Case for Uniform Cash Thresholds", *M-RCBG Associate Working Paper Series*, No. 80, Harvard Kennedy School. [8]

Skopeliti, C. (2023), "'It's easier to budget': people on why they swapped cards for cash", *The Guardian*. [25]

Sono, K. (2003), "Chapter 34 Legal Tender: A Notion Associated with Payment", in *Current Developments in Monetary and Financial Law*, International Monetary Fund. [74]

State Administration of Foreign Exchange (SAFE) (2024), *PBOC, MCT, SAFE, and NCHA issue Notice on Further Optimizing Payment Services at Key Cultural and Tourism Venues to Facilitate Payments*, State Administration of Foreign Exchange (SAFE). [55]

Sveriges Riksbank (2022), *Obligation for major banks to provide certain cash services*, Central Bank of Sweden. [63]

Tapper, J. and G. Eretuyan (2024), "Global IT outage shows dangers of cashless society, campaigners say", *The Guardian*. [33]

The Bank of Lithuania (2021), *Memorandum of Understanding for Ensuring Access to Cash in Lithuania*, The Bank of Lithuania. [68]

The State Council, P. (2024), *China unveils measures to optimize payment services*, The State Council, People's Republic of China. [54]

Treasury (2024), *Consultation paper: Mandating cash acceptance*, http://www.pmc.gov.au/government/commonwealth-coat-arms. [51]

Treasury (2023), *A Strategic Plan for Australia's Payments System*, Commonwealth of Australia. [46]

United Nations (1948), *Universal Declaration of Human Rights*, United Nations General Assembly. [77]

van der Cruijsen, C. and J. Reijerink (2023), *Uncovering the digital payment divide: understanding the importance of cash for groups at risk*, de Nederlandsche Bank. [19]

Welte, A. et al. (2024), *COVID-19 Hasn't Killed Merchant Acceptance of Cash: Results from the 2023 Merchant Acceptance Survey*, Bank of Canada. [16]

World Bank Group (2024), *Digital Transformation Drives Development in Africa*, World Bank Group: Results Briefs. [13]

Zamora-Pérez, A. (2022), *Guaranteeing freedom of payment choice: access to cash in the euro area*, European Central Bank. [22]