



Reserve Bank
of New Zealand
Te Pūtea Matua

Inclusion opportunities for digital cash

Digital Cash Consultation Note #3

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Abstract

The Reserve Bank's primary objective for digital cash is to ensure that central bank money remains available to New Zealanders and to be used digitally. This requires it to be inclusive. As the use of digital products increase, digital inclusion is becoming more important for financial and social inclusion. This note supports the Digital Cash Consultation Paper by setting out the circumstances underpinning digital financial inclusion and explaining how digital cash could benefit inclusion. There are many barriers in New Zealand's digital financial infrastructure that cause exclusion. Some barriers can be removed by thoughtful design while others are more difficult. Digital cash might not alleviate all these barriers, but it could provide New Zealanders with another payment choice that is more accessible than other digital options. In doing so, the digital cash option has the potential to act as a catalyst for broader financial inclusion as people learn how to use it and gain confidence to use other financial services.

1 Introduction

Everyone should have an accessible way to pay and save. Digital cash has the potential to support digital and financial inclusion. Central bank money in the form of cash currently supports financial and social inclusion. In considering the design of a digital form of cash, the Reserve Bank is prioritising that central bank money is available to New Zealanders and able to be used digitally. Given this, one of the key principles for digital cash is to be universal – that is everyone will be able to use it for everyday payments and savings, just like with cash. This requires it to be inclusive.

This Consultation Note expands on the benefits that digital cash could bring to digital financial inclusion. It supports the [Digital cash in New Zealand Consultation Paper](#) released 17 April 2024.

It finds that digital financial inclusion is broader than having a bank account. It is about meaningful choice, and accessibility irrespective of personal circumstance or abilities. Digital cash can enhance wellbeing and inclusion outcomes for people, by providing a new set of choices and options that are unconstrained by today's money and payment services, and that overcome certain digital barriers.

The rest of this Note is as follows. Section two outlines how the Reserve Bank is considering financial inclusion in the development of digital cash. Section three describes New Zealand's digital financial inclusion context; section four describes the potential inclusion benefits of digital cash and describes how these led to the formation of the inclusion sub-criteria in the digital cash principle of 'Universal'. Section five concludes.

2 Understanding inclusion

The Reserve Bank recently outlined the various steps it is taking to consider and embed financial inclusion.¹ In this outline, the Reserve Bank's working definition of an inclusive financial system is one in which all New Zealanders have reasonable access to financial products and services that meet their needs.

In the context of digital cash, inclusion arises when people have agency over their interactions with money and payments. Agency to participate in the economy, but also in social and cultural life, is reliant on two factors:

1. **Meaningful choice:** People have a range of products/services available that are both affordable and suitable to their circumstances.
2. **People can confidently exercise that choice (autonomy).** This relies on:
 - i. **Information:** people have useful information about the range of products/services
 - ii. **Skills:** people have the skills needed to compare and access that range
 - iii. **Trust:** people have a level of trust in the service provided
 - iv. **Motivation:** people feel the self-determination to use the products or services through the channel they are offered (including using these for the first time).

This view of inclusion stems from developmental economics and is consistent with the Treasury's Living Standards Framework. It also aligns with the Department of Internal Affairs (DIA) work on

¹ See Reserve Bank (2023).

digital inclusion. The DIA sets out four elements of digital inclusion as access, motivation, skills and trust.² Access can be equated to 'meaningful choice' and motivation, skills and trust can be equated to factors supporting whether people can meaningfully exercise their choice.

The Digital Inclusion Research Group (2017) states, "a digitally included person is someone who has access to affordable and accessible digital devices and services at a time and place convenient to them, as well as the motivation, skills, and trust to use the internet to pursue and realise meaningful social and economic outcomes."

2.1 Who is not included?

To consider who is financially or digitally excluded this note draws from the Council of Financial Regulator's (CoFR) vulnerability framework. This framework focuses on people's circumstances rather than groups of people. The framework draws on work by the Ministry of Business, Innovation and Employment (MBIE) and the Financial Markets Authority (FMA) to map four drivers of vulnerability as:

- Health and physical factors – health conditions or illnesses that affect the ability to carry out day-to-day tasks.
- Life events – such as bereavement or relationship breakdown.
- Resilience – low ability to withstand financial or emotional shocks.
- Capability – low knowledge of financial matters or low confidence managing money.

The CoFR framework acknowledges that vulnerability to financial or digital exclusion is not static but can change over time and that multiple vulnerabilities can be experienced at the same time.³

As financial products and services are increasingly more digital, overall financial and social inclusion is connected to digital inclusion. For example, Grimes and White (2019) find that people without internet access tended to also have lower subjective wellbeing than those who do have access. The trend towards digital money and payments, exacerbated by the pandemic, and the decline in cash use and availability reinforces the need for inclusive digital payments. Disparities in access to digital devices and the internet have become barriers to payments.⁴

3 New Zealand's current inclusion outlook

As described above, people have agency to participate in the economy, and social and cultural life, when they have 'meaningful choice', and the 'ability to exercise choice'. This section assesses the state of digital financial inclusion in New Zealand by considering barriers to peoples' 'meaningful choice' and 'ability to exercise choice' in the financial system.

3.1 Meaningful choice of products and services

Transaction accounts, borrowing and saving products, digital devices and access to the internet can all be indicators of whether New Zealanders have meaningful choice of financial products and services that are provided digitally.

² DIA (2019).

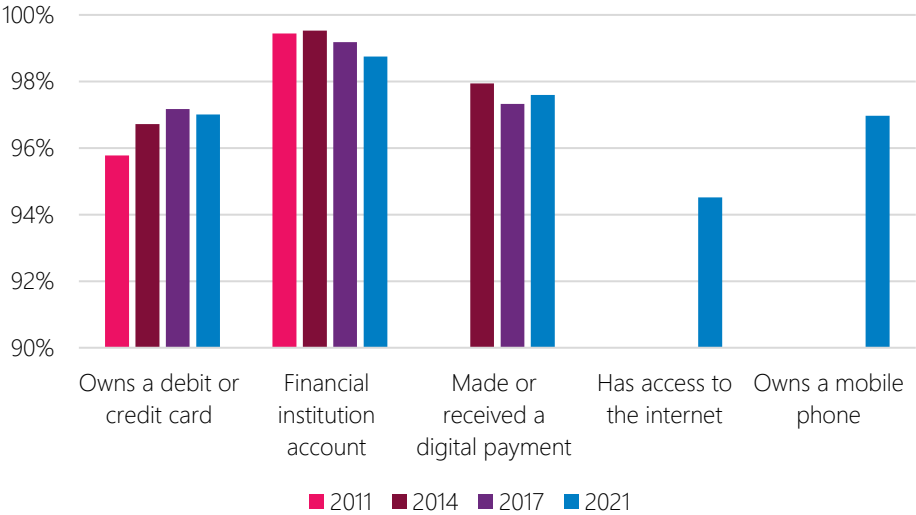
³ CoFR (2021).

⁴ Auer et al. (2022).

A transaction account is an essential financial service. Transaction accounts are the cornerstone of payments services and act as a gateway to other financial services.⁵ Borrowing and savings products provided through the formal financial sector enable people to generate income and wealth, and also improve financial resilience in the case of loss of income or change of circumstance.

At first glance New Zealanders appear to have good access to digital and financial products and services. Figure 1 shows that most New Zealanders have transaction accounts, own either a debit or credit card and use digital products and services.⁶

Figure 1: New Zealanders use of financial products (% age 15+)



Source: Demirgüç-Kunt et al (2021)

The 2017 report Digital New Zealanders: The Pulse of our Nation, asserts that New Zealand is among the best in the world for digital infrastructure. The 2013 Census indicated 23 percent of New Zealand households were without access to the internet. The 2018 Census showed a substantial increase in digital access with only 14 percent of participating households stating they do not have access to the internet. Although this is likely an under-estimation given the digital exclusion issues with the 2018 census and all-time low response rate.

However, we must also consider:

- Type of internet available in New Zealand, by suburb and with demographic data overlaid (including ethnicity).
- Upload and download speeds, by suburb and with demographic data overlaid (including ethnicity).
- Percentage of homes and businesses with access to ultra-fast broadband.

The rest of this section presents four focus areas where user choice of products and services could be improved and for whom.

⁵ Committee on Payments and Market Infrastructures (CPMI) et al. (2016).
⁶ Demirgüç-Kunt et al (2021).

Focus area 1: People with infrequent or no use of digital payments

There is a small portion of people who are reliant on cash payments all the time, and a higher number of people that rely on cash payments in certain circumstances. As of March 2023, approximately 40 percent of New Zealanders use cash upwards of twice per week.⁷

Some people do not have debit or credit cards that can be used for online payments (EFTPOS debit cards cannot be used for online payments). These people have few options if they need to make or receive an online payment. For example, the Citizens Advice Bureau (CAB) found that some people were excluded from paying for government services such as a passport application, when these payments moved to online only. In these circumstances, people are required to purchase a prepaid debit card, such as a Prezzy card, to make online payments.

Due to these circumstances and a public campaign lead by the CAB, New Zealand is now a signatory to an Open Government Partnership, and has made a commitment to establish an inclusive, multi-channel approach to the delivery of government information and services (Commitment 3 in the National Action Plan).⁸

However, without digital payments, people still lack access to other online products and services. This is a significant area of exclusion, which is likely to grow if left unaddressed due to the considerable growth of e-commerce and decline in popularity of traditional retail. New Zealand's online spending reached \$6.07 billion in 2022.⁹

Focus area 2: Infrequent or no use of financial services

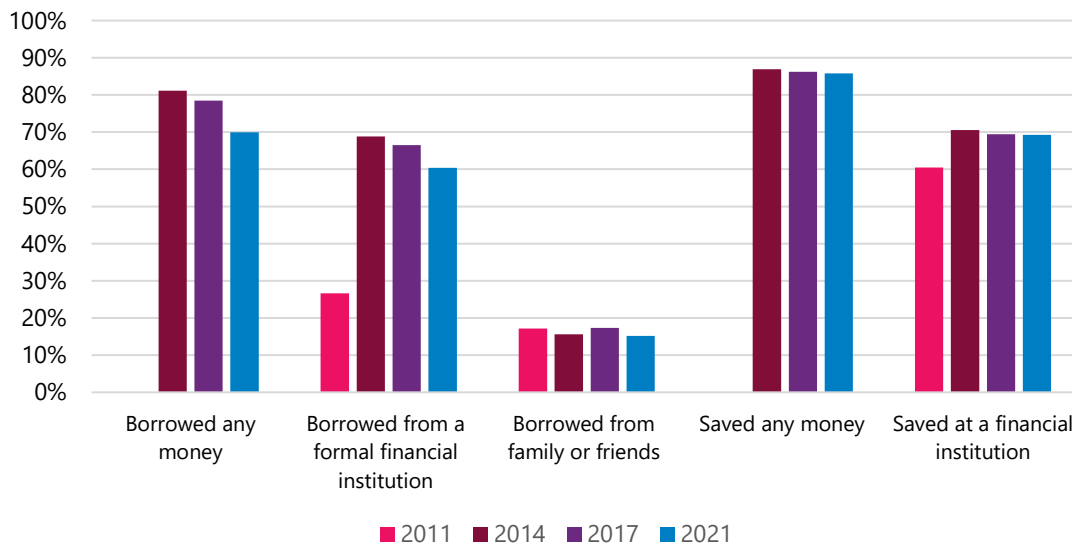
There is also room to improve access to other digital financial products and services such as access to borrowing and saving. Figure 2 shows that most New Zealanders have used formal financial institutions to borrow and save money, but some are relying on informal arrangements. While informal borrowing and savings arrangements can be beneficial for some people, they can also be harmful if the right protections are not in place. What is important is that people have access to formal borrowing and savings products if they want to use them.

⁷ Cash use (H3) - Reserve Bank of New Zealand - Te Pūtea Matua (rbnz.govt.nz). Taken from the latest survey data for March 2023.

⁸ The Open Government Partnership (OGP) is an international agreement by governments to create greater transparency, increase civic participation and use new technologies to make their governments more open, effective, and accountable.

⁹ NZ Post (2023).

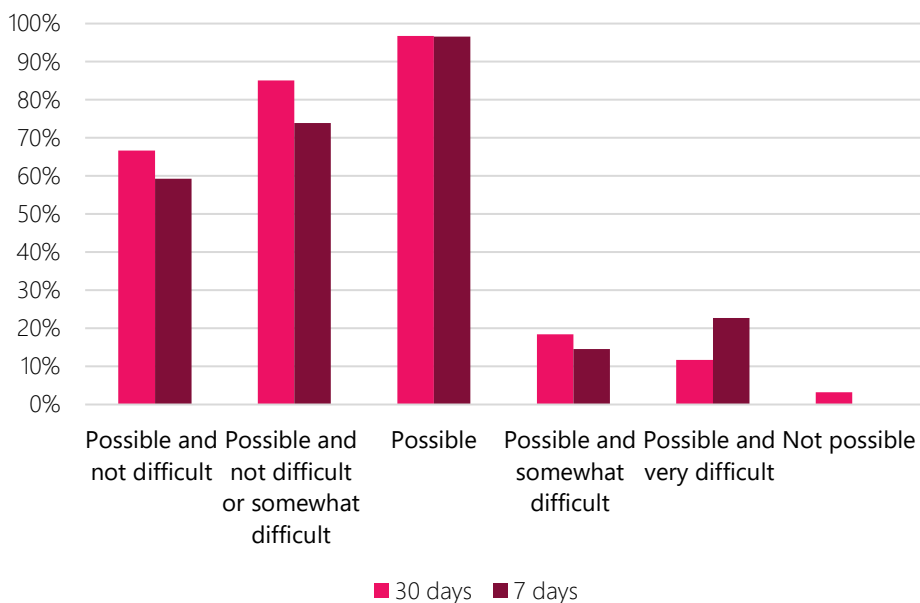
Figure 2: Use of savings and borrowing products and services (% age 15+)



Source: Demirgüç-Kunt et al (2021).

Being able to access funds in an emergency or during a period of no income is a key part of financial resilience for individuals. In 2021, 97 percent of adults reported “it was possible” to obtain funds in in 30 days (Figure 3). The main source of these funds was savings (59 percent), then family and friends (11 percent), borrowing from a bank or private lender (9 percent) and 5 percent of people would use other sources.¹⁰

Figure 3: Ability to come up with emergency funds (% age 15+)



Source: Demirgüç-Kunt et al (2021).

¹⁰ Demirgüç-Kunt et al. (2021).

Focus area 3: Infrequent access to the internet and digital services

Device and provider access can present a barrier to digital financial inclusion. It is not straightforward to find a simple set of statistics that capture internet access. Access depends on both a device and internet and is not static. For example, family members may all share one device, home internet plans may have caps, and internet data may be bought (topped up) infrequently.

The CAB notes that the cost of digital devices or internet access can be prohibitive to some households.¹¹ This finding was supported by Digital NZ reports from Pacific peoples, and Māori.¹² Some people are unable to pay for mobile phone and data plans every month. Only 79 percent of households are on unlimited data plans. According to the Digital Equity Coalition Aotearoa, these plans remain unaffordable for many households with low incomes, particularly those relying on Ministry of Social Development (MSD) benefits (8 percent of households).¹³ Furthermore, a smart phone may not provide access to all online services. At one point, Immigration New Zealand's webpage did not support smart phones and applicants were required to use web browsers on laptops or desktops to submit an application.¹⁴

Grimes and White (2019) identify that people living in social housing, with disabilities, living in larger rural towns, who are older, Pacific or Māori, unemployed or not seeking work are more likely to face lack of internet access.

The BNZ Digital Skills Report of 2021, conducted in alignment with Digital Equity Coalition Aotearoa, found Māori and Pacific Peoples were overrepresented among their clients experiencing digital exclusion (representing 20 percent and 14 percent of digitally excluded clients, but 13 percent and 8 percent of clients overall).¹⁵ Young people who experience digital exclusion are disproportionately Māori and Pacific Peoples.¹⁶ These findings are consistent with the views expressed to us by members from the CAB.

Focus area 4: The unbanked minority

Although many people have access to transaction accounts, the implications are significant for the 1.25 percent of adults who do not (just over 51,000 people).¹⁷ People without transaction accounts cannot receive salary, wages, or a benefit and struggle to pay for basic items. There are many circumstances where people may struggle to open a bank account. This section does not attempt to cover all of these circumstances.

One group of people that may face difficulty retaining or opening transaction accounts are people released from prison. Before an offender starts serving their sentence, there is limited support to manage their finances. For example, to suspend automatic payments or direct debits from their accounts. So, serving offenders can go into overdraft and have their transaction accounts closed. Some serving offenders may receive a lump sum of money (i.e. inheritance or compensation payments such as from the Abuse in Care Commission of Inquiry) but can't open a bank account to receive the funds. This puts them in a position where they cannot receive the funds, or they must nominate someone to receive the funds on their behalf. Many, if not most, people released

¹¹ CAB (2020).

¹² DIA (2021a).

¹³ Digital Equity Coalition Aotearoa (2022).

¹⁴ CAB (2020).

¹⁵ CAB (2020).

¹⁶ BNZ (2021) uses demographic statistics to better understand those who can use the internet and online services.

¹⁷ Demirgüç-Kunt et al (2021).

from prison, do not have a bank account.¹⁸ As at 31 December 2023, there were 9115 serving offenders in New Zealand.¹⁹

One option for people without bank accounts is 'Total Money Management'. This service receives money on behalf of their clients into their own bank account and provides the client with cash. The service also pays bills on behalf of their clients. It is used for clients that are unable to manage their finances themselves. There are currently 21 financial mentoring services across New Zealand that offer Total Money Management. Westpac New Zealand has also introduced a 'New Start' program to support people released from prison into opening bank accounts, but the uptake has been limited.

3.2 People can confidently exercise choice

Inclusion also requires the ability to confidently exercise choice. This section explores the information we have on the skills, information and sense of trust New Zealanders have that enable and motivate them to access and use financial and digital products and services. It draws from several New Zealand consumer surveys and reports. These are the Financial Market Authority's research on the consumer experience with the financial sector (2022), Bank of New Zealand's report on digital skills for life in Aotearoa (2021), Payments New Zealand's report on understanding how consumers pay (2022), the CAB's report on digital exclusion report (2020), and the DIA's report on digital inclusion (2019) and subsequent inclusion reports by Māori and Pacific peoples published on its website.

The rest of this section focuses on key barriers to people's ability to exercise choice: skills, trust and information, and confidence and motivation.

Focus area 5: Lack of ability or skill

People with disabilities report difficulty using current digital financial infrastructure. In particular, people with low vision or blindness can face challenges using digital financial infrastructure. The Blind Foundation submission to the Retail Payments System Act in 2016 reported that around 40 percent of their clients required the assistance of a sighted person to do their banking and pay their bills.²⁰ They report that point of sale terminals do not always have tactile distinction, sufficient lighting, screen contrast, and auditory feedback from keypads. In addition, some merchants use plastic protection sleeves. They warned that touchscreen only terminals were in many cases inaccessible for people with low or no vision. The situation has not improved in 2024 as merchants continue to roll out touchscreen terminals and reports of sight-impaired people losing their ability to make payments independently continue.²¹

Beyond physical ability, literacy, financial and digital skills are required to use digital financial products and services.

Literacy Skills

A key underlying skill supporting confidence in using online products is literacy. Online information is predominantly given by written information in contrast to in-person services where information may be explained verbally. There is a small group of people who face a literacy barrier, and these people usually rely on support offices and in-person assistance.²² A 2020 UNICEF report found that

¹⁸ Westpac (2023).

¹⁹ Department of Corrections (2023).

²⁰ 42.2 percent reported needing help banking, and 38.5 percent reported needing help paying bills. Blind Foundation (2016) submission to Ministry Business, Innovation and Employment.

²¹ Radio New Zealand (2023).

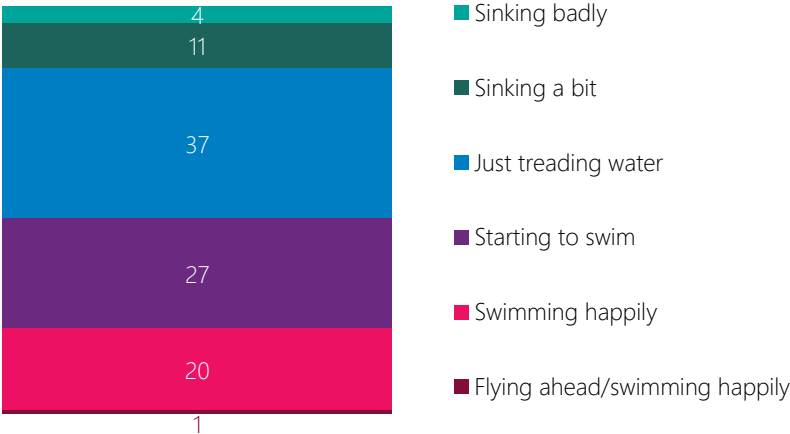
²² CAB (2020).

35 percent of 15 year olds in New Zealand struggle to read and write.²³ A 2016 OECD (Organisation for Economic Co-operation and Development) report stated that 11.8 percent of New Zealand adults attain level 1 or below literacy skills.²⁴ These statistics may reflect people with learning disabilities as well as other circumstances that make comprehension from reading text alone difficult.

Financial skills

There is a clear vulnerability regarding ‘financial skills’ that hampers consumer confidence when engaging in the New Zealand payments ecosystem. The FMA surveyed the state of ‘financial capability,’ and found that a mere 20 percent of New Zealanders were ‘flying ahead’ or ‘swimming happily’ in their current financial situation. Further breakdowns of the study include; 27 percent of New Zealanders were starting to swim comfortably, 37 percent are just treading water, and 15 percent were sinking a bit or badly in their financial situation (Figure 4). This translates over to the confidence and attitudinal responses regarding financial position. While 57 percent of New Zealanders feel completely in control of their day-to-day finances almost two in five (37 percent) individuals say they lack sufficient funds to save. Another noteworthy attitude is that one in four consumers see themselves as ‘spenders’ rather than ‘savers’ in their approach to managing their finances.

Figure 4: Financial positions of New Zealanders (%)



Source: FMA et al. (2022).

To get an idea of consumers reflective understanding of financial matters the FMA also asked New Zealanders to self-rate their financial understanding and knowledge. Just over half (53 percent) of those surveyed felt that they have a good level of financial comprehension, with a further 37 percent giving neutral scores and 9 percent putting themselves on the low level of the spectrum. Females (49 percent) and youth aged 18-24 years old (38 percent) also appear to lack financial confidence compared to the overall survey response, highlighting the circumstantial nature of financial literacy.

²³ Gromada et al. (2020).

²⁴ Level 1 and below skills meaning people can read brief texts on familiar topics and locate a single piece of specific information identical in form to information in the question.

Digital skills

Most New Zealanders use digital devices every day including for their money and payment needs. However, BNZ (Bank of New Zealand) reports that 20 percent of New Zealanders have below essential digital skills.²⁵ These people may face digital exclusion from time to time. Lower income households, people with lower levels of education people and disabled people are overrepresented in this group. While the number of people who can pay for goods or services online is high (89 percent), they are lower for those who have low digital skills (62 percent). This means over a third of those with lower digital skills are likely excluded from online retailers and online government services requiring payment. The number of people with digital skills is higher, however, for internet banking.

Conversely, the Global Findex database found that in New Zealand internet payments of bills to be more ubiquitous than online account access. Just over 80 percent of adults in New Zealand use the internet to pay bills or to buy something online, but only 73 percent could use the internet to access an account. In addition, 95 percent of adults can make a card payment, a distinct uplift from mobile payment skills.²⁶

Table 1: BNZ digital skills report

Activity	Below essential skill level 2021	Essential skill level 2021	Essential plus skill level 2021	Below essential skill level 2022	Essential skill level 2022	Essential plus skill level 2022
Buying products or services	51%	89%	99%	62%	91%	93%
Internet banking	59%	94%	100%	70%	96%	98%

These statistics on digital skills are supported by the CAB's experiences with clients that experience a significant digital disadvantage. These include a lack of core digital competencies including sending emails, searching for information online, opening tabs and downloading or uploading documents. Their clients also lack confidence and motivation to give it a go.²⁷ For example, Real Me presents challenges to some of their clients, in particular those with language barriers.

"The increasing use of RealMe login is another barrier - those with a language barrier don't understand the information required and the reason they have to provide it."²⁸

In the DIA's digital inclusion work, some Māori reported that their communities need training in basic literacy and computer skills, programming and design, business and technology skills and maintaining wellbeing in the digital world.²⁹ The OECD also states that 5 percent of adults indicated no prior experience with computers or lacked basic computer skills.³⁰

Around 5% of adults lack basic computer skills.

²⁵ Essential skills include turning on a device, using the controls on a device, connecting to the internet by opening a browser, interacting with the main screens on a device, updating and changing a device password, changing the settings on advice to make it easier to use, plus at least one other skill.

²⁶ Demirgüç-Kunt et al (2022).

²⁷ CAB (2020).

²⁸ Ibid.

²⁹ DIA (2021a).

³⁰ MBIE and Ministry of Education (2016).

Focus area 6: Lacks trust and information

Trust and information are highly interlinked. This section outlines some key areas where trust in money and payments service providers is linked to the availability of certain information.

Trust in banks sits at 67 percent for New Zealanders (trusting somewhat or strongly), 52 percent for financial advisers, 48 percent for insurance companies and 44 percent for mortgage brokers. Distrust increases for those over 55 (in relation to advisers and brokers), for Māori in relation to banks, and for those on lower incomes. Trust in bank's can be related to the information that people can meaningfully access from banks. This requires access to information, as well as the ability to interpret this information (digital literacy skills) of what is normal online are key barriers to helping feel safe in an online environment.³¹

In the US, Maiden Lab's report found that distrust in banks by unbanked people stemmed from fear or experience of surprise punitive overdraft fees.³² The report found that a lack of control over potential costs (losing money) was the main factor for being unbanked. And that people in lower income brackets held strong views about the need to control costs. This shows that small fees can have a potentially significant impact on trust in financial products and service providers. New Zealand banks charge small overdraft fees and high interest rates on overdraft balances (Table 2).

Table 2: Overdraft fees in New Zealand banks

	Kiwibank	ASB	BNZ	Westpac	ANZ	Heartland
Unauthorised Overdraft fee	Free (Interest Only)	\$3	\$4	\$9	\$3	Free (Interest Only)
Interest rate (%p.a.)	22.00	22.50	23.70	19.95	27.90	16.00

Source: [Overdraft | Westpac NZ](#); [Personal overdrafts - BNZ](#); [Overdraft rates, fees and agreements | ANZ](#); [ASB Overdraft - A "buffer" for unexpected expenses | ASB](#); [YouChoose Savings Account - Pricing | Heartland Bank](#); [Overdrafts | Kiwibank](#)

Beyond bank fees, information about how and when a payment will be settled determines feelings of trust and safety. Payments NZ (2022) found that concerns about security, surcharges, which account will be charged and delayed transactions settlement create barriers to using contactless payments.³³ Payments NZ (2022) also found that 9 in 10 people are concerned about sharing their financial information with a third party.

Clear information may build trust; 72 percent of respondents told the FMA that 'fair treatment' was when the provider clearly explains the risks and benefits of their products and 69 percent indicated it was when the provider was transparent and simplifies the fine print.

Trust in the digital world can be more complex than in the case of the physical world, particularly in the case of online transactions. The BNZ digital skills report reiterates this sentiment, noting that trust is also an enabler of digital inclusion. Just under 69 percent of New Zealanders feel safe using the internet for online transactions.

³¹ People for people (2022).

³² Maiden Lab and MIT (2022).

³³ Payments NZ (2022).

Finally, CAB found that some people miss out on their welfare entitlements due to not providing required information or not understanding the processes required.

"Jeffrey is autistic and finds it difficult to understand digital processes. He needed a food parcel as his benefit had been reduced after he failed to attend an appointment. We organised a food parcel for him and discussed his needs in terms of income support."³⁴

Focus area 7: Low confidence and motivation

The FMA survey of consumer attitudes reveals that low confidence may be impacting people’s ability to use financial services. Around 30 percent of New Zealanders do not feel confident engaging with financial services and products (Figure 6).³⁵

Figure 6: FMA consumer confidence survey (%)



Source: FMA et al. (2022).

Groups that felt the least confident in their knowledge of financial products and services included younger people, women and Māori or Pacific peoples.

The FMA survey also found that only 31 percent of New Zealanders would know what to do if they were treated unfairly by a financial service provider.³⁶ This confidence worsens along gender lines, with women less confident at 25 percent. Further, those with low savings or financial confidence would feel less confident knowing what to do in the case of unfair treatment.³⁷

Beyond financial services, confidence was higher; 71 percent of New Zealanders reported they understood the steps they need to take when encountering significant challenges online.³⁸

³⁴ CAB (2020).
³⁵ FMA et al. (2022).
³⁶ Ibid.
³⁷ Ibid.
³⁸ BNZ (2021).

4 Opportunities and requirements for digital cash to improve inclusion

It's our view that digital cash can:

1. Add *meaningful choice* to the range of money and payment products and services that people can confidently select; and
2. Be a *catalyst* to using other digital payments and act as an on-ramp to using other services in the financial sector.

4.1 Digital cash as a meaningful choice

The primary contribution digital cash can make to inclusion is by adding another choice to consumers. It cannot address all barriers to digital financial inclusion, but it can reduce some of the hurdles that people face when accessing financial services digitally.

Like other forms of digital money, digital cash benefits include: participation in e-commerce and online payments, ability to prevent physical loss and theft, no transportation cost, low transaction costs, low storage costs. It would also provide the user with a digital record of their transactions. This can help people to keep track of spending and automate savings and other payments.

As a new form of money, digital cash could also support new innovative use cases like better budgeting or automatic reminders; or programming conditional actions with other parties like making a payment once goods (like online trades) are received. It could also be used by firms to develop new services that are not currently provided, particularly for people who are unbanked or underbanked.

Digital cash can also support people making and receiving payments to and from government. This is an area where our stakeholders have identified many challenges. It could give people an alternative to receive government payments, this would benefit people who do not like to give their bank account details to government departments. Programmable actions could be used to ensure there is no delay between when a person is approved for a government payment to when they receive it, which could alleviate processing wait times for beneficiaries. Digital cash could also provide a 'single customer view', so government departments that collect debt repayments can see the person's total debt to government burden, and ensure repayments are not unaffordable.³⁹ A person would need to consent to sharing their information this way.

Finally digital cash may appeal to people who do not trust banks, who trust cash and would like a digital version, or who simply want another option.⁴⁰

The Reserve Bank may not be able to address all barriers to New Zealanders ability to exercise their choice, but it can ensure the design of digital cash is as accessible as possible.

To ensure that digital cash is a meaningful choice to people it requires:

1. Inclusive interfaces

Digital cash should be highly accessible to all types of people. In particular, the ways people interact with digital cash and obtain access to it must be accessible. The President of the

³⁹ Inland Revenue Department (2023).

⁴⁰ Likewise, people may not prefer this feature of digital cash so may choose to continue using privately-issued money.

National Executive Committee of Disabled Persons Assembly shared the five A's of accessibility with the Reserve Bank to allow everyone to participate equally, confidentially and independently.

- i. Affordability: i.e. price.
- ii. Availability: i.e. location.
- iii. Accessibility: i.e. the delivery of information takes into account different needs.
- iv. Accommodation: i.e. the fit between how resources are organised and abilities of users.
- v. Acceptability: i.e. cultural and other preferences.

The requirement for digital cash design is to ensure that it enables people by taking into account their needs including visual, auditory, motor/mobility, learning/cognitive, psycho-social, dual or more (when people have a range of impairments).

2. Multi-tiered ecosystem

Digital cash that is provided and operated via a market of service providers and operators offers more consumer choice. For example, some providers may focus on the needs of smaller groups of people that are currently underserved. This requires the digital cash ecosystem to be open, competitive and attractive enough to new entrants to come and serve the market.

3. Reserve Bank governance of the ecosystem

The governance of the digital cash ecosystem should consider what accessibility requirements are placed on service providers to ensure that people of all skill levels can access the customer interfaces to ensure the first requirement is achieved. For example, the Reserve Bank could require a minimum standard of communication and information on all digital cash products.

4. Complement to physical cash

Physical cash is critical for inclusion and heavily relied upon for some people. The digital cash ecosystem should incentivise retailers to continue to accept both physical and digital cash. For example, physical cash could be converted in and out of digital cash holdings via smart ATMs or at participating retailers. Service providers and retailers should continue to accept current forms of payment as well as a digital cash to preserve consumer choice. To support this a digital cash ecosystem should be highly interoperable with the existing financial system, particularly the physical cash system.

5. Offline functionality

Because it is digital, we must consider digital barriers. Digital cash should be easy to connect to, affordable, and accessible. This includes access to digital devices, services, software, and content that meets people's needs including Māori, Pacific peoples, and disabled people. And at a cost that they can afford. It also means being able to connect to the internet where they are working, living, and playing.⁴¹ Digital cash that can be used to make and receive payments without access to the internet or relying on a smart phone would alleviate some of these barriers.

⁴¹ DIA (2021a).

4.2 Digital cash as an on-ramp to broader inclusion in New Zealand

Digital cash that is truly an accessible choice for New Zealanders will be an improvement on current digital financial services. The learning required to use a digital cash interface like a mobile wallet or NFC enabled card is transferrable to other services. Once people overcome these barriers with the digital cash environment they might be inclined to use other financial and or digital services. This can lead to an increased range of choice and better outcomes for people.

Kenya's M-PESA provides a strong example of this effect. The M-PESA network provides basic mobile payments services and connects them with a range of other financial services. Suri and Jack (2011) found in a longitudinal study of 2,016 households in Kenya that people using M-PESA managed better than people who were not using M-PESA when they experienced a sudden or unexpected drop in income. This suggests access to M-PESA allowed these households to obtain emergency funds when needed.⁴²

We also observed this effect during the pandemic when we were required to do everything online. Studies in the UK and Europe have shown that people have continued to use digital products well after the pandemic restrictions were removed.⁴³ In particular, online payments in the Euro region (as a share of non-recurring purchases) increased from 6 percent in 2019 to 17 percent of all purchases in 2022 and point of sale card transaction value overtook cash value for the first time.⁴⁴ In the UK, the shift towards digital payment methods continues to remain higher than pre-pandemic levels.⁴⁵ Both merchants and consumers are anticipating digital payments to become embedded patterns following the pandemic, with 60 percent of firm respondents to a Deloitte study expecting up to a 30 percent reduction in physical cash usage at the end of the pandemic. In Germany, Bundesbank surveys of April and May 2020 showed that 73 percent of respondents who changed their payment behaviour would stick to this new method.⁴⁶ While some of these behavioural changes may be due to permanently reduced physical cash infrastructure, some will have been due to pandemic restrictions that have now eased.

Finally, digital cash can help people access financial products such as borrowing and insurance by producing reliable and sharable transaction histories.

To ensure that digital cash is an effective onramp to other parts of the financial system it also requires:

1. High interoperability between the digital cash platform, service providers and other parts of the financial sector

The more connected digital cash is with other parts of the financial system, the more likely it can lead to greater uptake in other services. Taking the access to borrowing example above, a digital cash that allows users to easily share their transaction data with lenders would support greater access to these other products.

2. Good data governance

Digital cash data must be treated carefully to avoid deepening exclusion. For example, people who have had an experience with a payday lender and been unable to make their repayments

42 Jack et al. (2014) reported that "M-PESA users were able to absorb large negative income shocks (such as severe illness, job loss, or harvest failure) without any reduction in household consumption. In contrast, statistically comparable households who were not connected to M-PESA experienced, on average, a 6-10 percent reduction in consumption in response to similar shocks... households with access to M-PESA received funds from a larger network of senders."

43 Auer et al. (2022).

44 European Central Bank (2022).

45 Caswell (2022).

46 Balz (2020).

may find themselves further excluded from lending opportunities if this data is shared widely. In addition, some applications of data such as the gamification of banking apps or lending opportunities may result in some people taking out more loans than are needed.⁴⁷ Any design would need to ensure consumer data is at least not constraining their choices, and at worst not creating predatory lending.⁴⁸

3. Wrap around support services to educate and enable people to use digital cash in the first instance

Digital cash cannot directly solve for all issues related to digital and financial inclusion. Access to hardware, transaction accounts and education and training programs are also required to support people with the skills and confidence to exercise their choice and autonomy over their money and payments.

4.3 People-centred design features

Communities would have the opportunity to design digital cash services and solutions onto the digital cash platform that suit their communities and needs. This would provide Māori, Pacific and other communities with the ability to design services that reflect cultural needs, customs and use cases.

Reports from Māori and Pacific peoples and the disabled community emphasised the importance of people first design. For Pacific peoples “community knows community best”.⁴⁹ Māori leaders want to work with government to provide solutions for Māori. “Digital inclusion needs to be culturally bound. If we’re talking about Māori, then Māori need to be involved at all levels of digital inclusion. They need to be part of the design process as users, they need to be designers, they need to be decision makers sitting at the top table. That is what is needed if government is to truly support te ao Māori and want to see Māori digitally included. Nothing less than that. Nothing.”⁵⁰

5 Conclusion

Digital cash must be inclusive to meet the Reserve Bank’s objective that central bank money is available to all New Zealanders. Digital financial inclusion is a wide-ranging topic with many underlying factors. The Reserve Bank cannot address all barriers to digital financial inclusion, but it can provide a new option to consumers and ensure that accessibility is designed into the digital cash interfaces. An accessible digital cash option has the potential to act as a catalyst for broader financial inclusion as people learn how to use it and gain confidence to use other financial services.

The findings from this Note are captured in the ‘Universal’ digital cash design principles. The digital cash principles embed our digital cash objectives and desired outcomes into its design.⁵¹

Table 3: Digital cash principle - Universal

Principle	Supporting criteria
Universal	Inclusive

47 Narula, N et al. (2023).

48 This recommendation supports our Digital Cash ‘Private’ principle.

49 DIA (2021b).

50 DIA (2021a).

51 See the [Digital cash in New Zealand Consultation Paper](#) for the full set of principles.

Principle	Supporting criteria
<p>Digital cash will be universal. Everyone will be able to use it for everyday payments and savings, just like with cash.</p> <p>To achieve this, digital cash must be inclusive.</p>	<p>Everyone can access and use digital cash, in the same way that anyone can use physical cash to make a payment. This requires users to have meaningful choice, and autonomy.</p> <ul style="list-style-type: none"> • Meaningful choice: There is a range of money and payments products and services provided in the digital cash ecosystem. Physical cash is supported. • Autonomy: Digital cash is trusted and can be used with confidence. Digital cash services are accessible, and information is easy to access and understand.

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Digital cash consultation publications

To support the Digital Cash consultation the following notes and reports are available [here](#).

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- Reserve Bank (2024c) 'Innovation and reliability opportunities for digital cash', *Digital Cash Consultation Note*, No 2.
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