PSGR

Physicians & Scientists for Global Responsibility

# STEPPING BACK FROM THE BRINK – THE PROGRAMMABLE LEDGER.

**Four democratic risks that arise when Digital IDs are coupled to CBDCs.**

*'Programmable payments, the ability to build CBDC with tools such as smart contracts, are a core component of CBDC's ability to unlock new and future value for New Zealanders and will be a foundational piece of the CBDC... programmable payments enabled by the smart contract feature of CBDCs are seen as a key differentiator for CBDCs over the existing payments systems.' Accenture (2024).*

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# ABBREVIATIONS & ACRONYMS

| | |
|---|---|
| AI | Artificial Intelligence |
| AML/CFT | Anti-Money Laundering and Countering Financing of Terrorism |
| API | Application Programming Interfaces |
| APRA | Australian Prudential Regulation Authority |
| ASIC | Australian Securities & Investments Commission |
| BIS | Bank for International Settlements |
| CBDCs | Central Bank Digital Currencies |
| CDC | Cashless Debit Card |
| CPI | Consumer Price Index |
| DARs | Detailed Assessment Reports |
| DIA | Department of Internal Affairs |
| DISTF Act | Digital Identity Services Trust Framework Act 2023 |
| DPUP | Data Protection and Use Policy |
| FMA | Financial Markets Authority |
| FMI | Financial Market Infrastructure |
| FSAP | Financial Sector Assessment Programme |
| ID | Identity |
| ID4D | World Bank Group Identification for Development (ID4D) Initiative |
| IMF | International Monetary Fund |
| MPC | Monetary Policy Committee |
| OCR | Official Cash Rate |
| PFMIs | Principles for Financial Market Infrastructures |
| PSGRNZ | Physicians & Scientists for Global Responsibility New Zealand Charitable Trust |
| RBA | Reserve Bank of Australia |
| RBNZ | Reserve Bank of New Zealand |
| TF | Trusted Framework |
| WEF | World Economic Forum |

*'But there can be no government by the people if they are ignorant of the issues to be resolved … there can be no assurance that government is carried out for the people unless the facts are made known [and], the issues publicly ventilated.'*[1]

## EXECUTIVE SUMMARY

By releasing this discussion paper, Physicians & Scientists for Global Responsibility New Zealand (PSGRNZ) aim to encourage debate around governance, democracy and the inter-operability of Digital Identity systems and central bank digital currencies (CBDCs). What are the risks from adopting CBDCs which are tied to your digital ID, your digital 'twin'?

This paper asks that all New Zealanders, including members of Parliament and government officials, consider Digital IDs and CBDCs as an inter-operable technology, and consider the implications of this *inter-operability* from a risk-governance and long-term interest perspective. This is difficult, as these technologies are paradigm-changing and it is difficult to predict what the future may hold. However, once in place, they will be all but impossible to withdraw from. Risk management involves understanding the extent to which the government is identifying, assessing and reducing long-term risks and vulnerabilities. It is also critical that our government officials and members of Parliament have sufficient information to pay attention to problems and trends, acute and chronic – and can practice adequate foresight.

> *'Safeguarding long-term interests, however, is not easy. There are strong political incentives in democratic systems for policy-makers to prioritise short-term interests over those of future generations. Powerful vested interests often hinder prudent economic or environmental stewardship. Governments must also grapple with deep uncertainty, policy complexity and multiple intra-generational and intergenerational trade-offs. Given such challenges, determining how best to govern for the future is not straightforward; nor is assessing the quality of such governance.'*[2]

However, the inter-operability of digital identity and central bank digital currencies, and the scale and pace at which their use can be expanded, demand that we consider these technologies from a broad public interest perspective.

PSGRNZ hope that this summary and the paper will help decision-makers read more widely, to understand why these technologies risk undermining not only democracy, but human rights and freedoms.

CBDCs are designed to fold into – or couple with - a larger, inter-operable, networked digital oversight framework, or architecture. Digital IDs will be a condition of access to CBDCs. The key difference between CBDCs and traditional digital money held in commercial retail banks is that

[1] Joseph, P. (2021). Joseph on Constitutional and Administrative Law, 5th Ed. Thomson Reuters. R. *v* Shayler 11.2.2. p.321

[2] Boston J, Bagnall D and Barry A (2019) Foresight, insight and oversight: Enhancing long-term governance through better parliamentary scrutiny. Institute for Governance and Policy Studies, Victoria University of Wellington. https://www.victoria.ac.nz/__data/assets/pdf_file/0011/1753571/Foresight-insight-and-oversight.pdf

CBDCs will be programmable. Individuals can only obtain a Digital identity (ID) if they agree to their biometric video and images (likeness) data being captured and stored.

**This paper sheds light on what PSGRNZ refer to as *four democratic risks* that arise from the inter-operability of Digital IDs and CBDCs.**

1. **Digital IDs coupled to CBDCs enhance all-of-government oversight over private activity.** Therefore, privacy issues in this document primarily concern government surveillance, including surveillance across government and through backdoor access points.
2. **CBDCs will be transferred electronically using pre-programmable smart contracts.** Smart contracts are executable code. They can be deployed remotely or directly on Central bank ledgers. Three-party locks can be programmed whereby a third party can issue directions. The third party could be a government, corporation, United Nations agency or A.I. entity. The finance and technology (Fintech) industry will contract to governments to support the design and control of the digital infrastructure. Central bank papers anticipate that smart contracts will be deployed to achieve larger policy objectives. Smart contracts have potential to incentivise or disincentivise behaviour by ensuring CBDC access is solely available for 'approved' activities.
3. **The potential for erosion of parliamentary oversight.** New Zealand's Central bank, the Reserve Bank of New Zealand (RBNZ) is, of course, accountable to our sovereign democratic government. Conventional money creation through the budgetary (appropriations) process arises through processes of negotiation between Ministers, department heads and their staff and public lobbying. Private bank money creation through loans is a consequence of political and economic decision-making. Reserve bank power to create or release CBDCs would be at arm's length from these processes and remain largely confidential or secret in nature.

   Unfortunately, much of the RBNZ's CBDC strategy development and consequent campaign has already been undertaken in secret. The RBNZ, a semi-independent government authority, is currently undertaking a major four-stage campaign to roll-out central bank digital currencies (CBDCs). The two final stages have not been publicly disclosed. It's unclear to what extent that Parliament and the Minister of Finance, Minister Responsible for the Treasury, has been informed of the Reserve Bank's CBDC strategy.
4. **Continued increase in oversight and delegation of the production of strategy, policy and rules to the Bank for International Settlements (BIS) and International Monetary Fund (IMF).** This can occur through mentoring, guidance, global harmonisation and 'best practice' arrangements. Such arrangements can undermine and erode the powers of sovereign governments. The BIS and IMF lead global policy on CBDCs; working closely with the 'Fintech' sector. These institutions are neatly situated to take advantage of delegation of powers, and the opportunities presented by interconnected Central bank ledgers.

## Background to the need for a Moratorium

The world of Central banking and Fintech is both complex and opaque. This paper has aimed to identify and review many of the relevant issues that shape the current conversation around the worthiness of CBDCs, while also querying the missing 'bits' that promote public ignorance and hence prevent critical enquiry. Part one briefly outlines the social, political and legal concept of *trust*, how trust is an important democratic value that is essential for good government.

**Part one** considers the discursive use of the term trust in Fintech and government communications in relation to Digital IDs and CBDCs and how this relates to trust in democratic societies.

The mysterious RBNZ CBDC campaign is discussed in part two. RBNZ has been far from transparent regarding the extent of policies developed for their CBDC campaign. The RBNZ refer to CBDCs as 'digital cash'. RBNZ's term 'digital cash' risks conflating CBDCs with retail digital money. The issue of programmability is pervasively understated. This paper will refer to digital cash as CBDCs.

The RBNZ only briefly touches on the last two of four stages. A roll-out in 2030 is presumed. The entire RBNZ campaign remains confidential. The Central bank's secrecy results in public ignorance about its activities. New Zealand society as a whole can only access the very limited information about plans for CBDC implementation that RBNZ has chosen to publicly publish. This includes some limited policy, some 'values', friendly case studies, and concerns that have previously been raised by collegial international organisations who also favour the implementation of retail CBDCs.

PSGRNZ highlight that the RBNZ-endorsed core CBDC benefits relating to 'monetary sovereignty' and 'inclusion' have not been developed by RBNZ, but rather, by the global central banks and the Fintech industry. Historically, Central banks have responsibility for issuing cash, which is a small percentage of the larger money supply and is subject to natural limitations. Central bank issued digital cash, or CBDCs carries none of these limitations.

The evidence used to support their CBDC campaign has been developed in partnership with the global consultancy firm Accenture. Accenture is a billion-dollar Fortune 500 company, which might consult with government agencies one week, and the Fintech industry the following week. Accenture's key priority is to enhance shareholder profits.

'Inclusion' language used by the RBNZ and global actors portrays a veneer of social justice and altruism, but often only implies greater access to financial services. 'Inclusion' language should not be used to whitewash or dismiss real concerns about a potential impact on human rights and freedoms, and the real experiences of indigenous peoples, when government laws are coupled with rules that extinguish social and cultural practices. A cashless trial in Australia recently revealed an administrative preference for technical tweaks, which increased administrative burdens for these communities and reduced the autonomy of the individuals involved.

**Part two** also provides an overview of the RBNZ's role and functions, including a brief review of 'a significant turning point in our history', a recent and extensive transformation process that the RBNZ has undergone in the past five years. This is necessary if society is to evaluate the RBNZ's existing roles and responsibilities as well as the new powers that the bank would gain in relation to CBDCs. It is also necessary to identify the potential for conflicts of interest, or contradictory powers that might leave that Central bank acting in such a way that is anti-competitive or contrary to the public purpose.

**Parts three and four** consider the influence of the Bank for International Settlements and the International Monetary Fund. These institutions have exerted and will continue to exert a powerful influence over RBNZ strategy. However, they have demonstrated by their actions over time, that they are far from impartial actors.

**Part five** discusses the digital infrastructure, the platform and ledger technologies, the potential for tokenization of currency or assets and the power of programmable smart contracts. It is essential that society understand the way CBDCs differ, and are anticipated to differ, from conventional digital currencies. It is also important that the society have some idea of the extent to which these

technologies will be predominantly designed and driven by the private Fintech sector, or as private-public partnerships with government agencies. As much of the technical expertise will lie in private industry, the legal, regulatory and institutional frameworks, and the commercial 'in-confidence' contracts, will require an extraordinary degree of cooperation with the private sector.

The networked, inter-operable design of these digital frameworks concentrates power in government agencies and the private institutions who will have commercial arrangements with governments. With a broad understanding of the sophisticated actors involved, it is difficult *not* to predict a shift in the balance of power. No New Zealand government-based consultations, whether for the Digital ID's or CBDCs have revealed this broader picture.

**Part 6** considers the outcomes in Nigeria and China where CBDCs have been released, and in Australia, where a cashless trial was undertaken. In China and Nigeria where CBDC trials have occurred, use patterns indicate that citizens have little desire to use the technology, and very little trust in the technology. In Australia, indigenous Australians (First Nations people) were negatively impacted. However, government reviews repeatedly wrote out or undermined the complaints of First Nations people, preferring to paint a rosy political picture of that cashless trial.

It is also advisable to consider that the CBDC policy campaign is not occurring in isolation. Digital IDs are discussed in **part seven**. Digital IDs are compulsory for access to a Central bank account. Policy papers predict an enlarged role for both Digital ID development and CBDC inter-operability. Our research suggests that the policy, values and language for both Digital IDs and CBDCs have been co-designed by transnational non-government stakeholders, including global management consultancies. The policy, language and values are then inserted into nation state discussion papers and policies, manufacturing a global consensus-based narrative. These values do not extend to the upholding of human rights and freedoms.

It is not surprising that the global banks and the Fintech sector have worked together, consortium-like, to frame the language and values underpinning public discourse around Digital IDs and CBDCs. This includes the envisaging of the global, networked digital infrastructure. Central banks, management consultants, and the Fintech industry work with exclusive non-government institutions, who have a core mission of influencing government policies to ensure optimum take-up of corporate solutions. It is simply good business practice to ensure nation states are receptive and optimistic about the potential of a Digital ID-CBDC digital infrastructure, all the way down to the smart contracts, the self-executing pre-programmable applications that are triggered if pre-specified conditions are met, that interface with the individual client.

In **part eight** we discuss the dilemma of regulatory capture, shedding light on the techniques used by private industry to capture government actors and agencies, to ensure that nation state initiatives and regulations pose no threat to the industries concerned, instead benefitting them.

Public oversight over what has been called a 'dark infrastructure', is impossible. Extensive undisclosed arrangements produce a black-boxed, intermeshed, network effect. From government officials (public servants) in the RBNZ and in partnering agencies, to the Fintech industry and management consultancies that provide contractual services. All of these arrangements will involve private and confidential negotiations that result in confidential (secret) agreements. The arrangements will be critical for fulfilment of technical operations and the design and contracting of services, including self-executing smart contracts, which have potential to be deployed to sanction/permit CBDC-related activities.

**Part nine** draws attention to the role of fiscal policy and money creation. This is because RBNZ's CBDC campaign is underway during the most severe economic downturn since at least the 2008-2009 financial crisis, or even the economic shocks of the 1980's. Therefore, there is a risk that the public may underappreciate the role of fiscal policy and inappropriately misinterpret CBDCs as an answer to New Zealand's economic woes.

PSGRNZ propose that the four democratic risks from the coupling of Digital IDs to CBDCs involve ten pathways of harm.

### TEN KEY PATHWAYS OF HARM

1) **Adding another hat to the RBNZ's role could well be a recipe for democratic disaster.**
2) **How much power would the Bank for International Settlements hold over Central banks, including the RBNZ?**
3) **Early adopters of new technologies are not well placed to assess long-term, unanticipated and off-target risks.**
4) **Policy and legislation can end up being a Trojan horse for industry interests.**
5) **RBNZ claims rules will be transparent. However, smart contracts will be secret.**
6) **The combined power of Digital IDs and Programmable CBDCs is not considered.**
7) **Overarching policies and legislation have left out democratic values and principles.**
8) **Human rights have not been taken into consideration, and smart contracts hold real potential for abuse of civil, constitutional and human rights.**
9) **There are constitutional and administrative law issues that must be addressed in public fora.**
10) **Decades of ignorance relating to fiscal policy has created a perfect storm for Central banks.**

Without context there is risk that society may underestimate the phenomenal shift in the relations of power that has potential to happen, mostly behind closed doors. These technologies have not arisen in a response to public need. Rather, the policies, potential and resultant language about what can be achieved, have been driven by large institutions who have significant political and financial conflicts of interest, who are independent of democratic parliaments.

## PSGRNZ recommend: A minimum six-year moratorium.

We consider that New Zealand should pause any development or trials of CBDCs and regard the inter-operable Digital ID-CBDC potential, with cautious skepticism.

## PSGRNZ recommend:

**A.** That a minimum 6-year moratorium, at least until 2030, is placed on any CBDC trial or project in New Zealand. This is in order to observe for an extended period of time, at least two election cycles, how this technology and related financial system intersects with the political and democratic landscape, and impacts civil, constitutional and human rights in early-adopting countries.

**B.** That the RBNZ is not granted authority to issue CBDCs until after 2030. That any parliamentary vote is taken *after* a six-year period of observation of the impact on other jurisdictions, including impact on rights and freedoms.

**C.** That government agencies equally accept traditional identification, passports and drivers' licences in parallel with Digital ID's and should not, through the design of policy or online internet portals, favour Digital IDs over traditional primary forms of identification.

**D.** That the broad powers held by the Department of Internal Affairs requires some examination in the context of information sharing agreements between government agencies and the potential for Digital IDs and CBDCs to be deployed to fulfil political objectives.

These 4 recommendations are made because there is no expert independent comment on the implications of the inter-operability of this intended networked architecture. There is a dearth of research in independent academia on the social, cultural, economic, political and legal implications of inter-operable Digital IDs and CBDCs. In this gap, globally influential management consultancies, that are listed as a top 100 strategic partner of the World Economic Forum (WEF), an industry think-tank, should not step in and offer their services as a proxy for public-good expert review. The fourth estate seems unwilling to discuss the big picture. Consequently, the New Zealand public have been left alone to both review the limited publicly available information and critically analyse the associated risks that remain unexamined by the RBNZ.

### Questions for governance.

Representative democracy can only 'work' if a sound and stable government reflects the will, or consent of the people. This imperfect arrangement involves incessant negotiation of slow-motion troubles.

Is it fair or reasonable that the Central bank, whose key function is stewardship of the financial sector, should also issue digital currencies? The RBNZ's role extends far beyond that of a financial markets regulator, a role that is central to maintaining trust in the New Zealand dollar. The RBNZ has a wider range of responsibilities than most Central banks worldwide, and these have expanded following recent reforms. Is it fair or reasonable that the RBNZ, the Central bank of NZ, whose key function is stewardship of the financial sector, should also issue digital currencies?

Democracies die when the Parliament-people relationship is severed or eroded, through rules, guidelines, crises and delegation to offshore powers.

There is currently no evidence that members of Parliament are aware of the biggest change in monetary policy in 50 years. Yet the House of Representatives, our elected members of Parliament, forms our Government. The Government is required to oversee, and hold the government to account for, the running of the country in the long-term public interest. [3]

In contrast to New Zealand members of Parliament and the RBNZ, the organisations that counsel the RBNZ, - the Bank for International Settlements, the World Bank and the International Monetary Fund have legal immunity and privilege. CBDC policy papers by these institutions persistently refrain from considering the real potential for entrapment from tying identity to a bank account that can be dually scrutinised and programmed by a nation state.

## Why a Moratorium?

This paper encourages debate in a very complex and predominantly opaque environment – the world of Central banking, money creation, global Fintech and the role of regulatory capture through the corporate capture of policy creation.

This is a macro-political issue and it speaks to the tendency of administrative officials to compartmentalise policy in order to get it over the line. 'Predictive' government anticipates that Artificial Intelligence (AI) will take a role in the future of deploying smart contracts, further building secrecy into the infrastructure. These shifts can occur incrementally and without disclosure, further undermining democratic checks and balances.

The concerns outlined by this paper cannot be understood unless the potential of this inter-operable digital infrastructure is broadly appreciated. The key features that differentiate *retail* bank digital currency, that is created when a private individual or corporation takes out a loan (that is not programmable), and *central* bank digital currency (that is, by design, programmable) have been downplayed by the RBNZ, but they have been fleshed out in international Central bank and Fintech white papers and conference seminars. Discussion outlining the responsibility for design and control of smart contracts, the potential for composability of self-executing smart contracts so that large groups can be tagged, and the commercial-in-confidence agreements which will prevent access to information, have also been downplayed.

Digital ID and CBDC coupled regulatory and governance architecture and the digital technology infrastructure carry extraordinary potential for abuse, because of the opacity and complexity of digital environments. However, the potential for digital money (or tokens) to encompass not only currency, but assets and behaviours, such as in a social credit system. We cannot dismiss the potential of this tech. It's not just the influence of global powers that make this technology democratically precarious.

Public risk is amplified by two increasingly popular lawmaking processes used by New Zealand cabinet Ministers – using the excuse of urgency to speed legislation through, and increased production of secret Orders in Council (secondary legislation), which bypass Parliament.

Big corporations draw upon the seductive nature of new technologies to claim to solve social dilemmas. It's unsurprising that Fintech emphasises the potential of digital currencies as a tool for human collaboration, volunteering, social prescribing and social and regenerative finance. However, all these functions can be enabled through the government Budget process and should be publicly and democratically agreed upon.

[3] Boston J, Bagnall D and Barry A (2019) Foresight, insight and oversight.

## QUESTIONS THAT ARISE

- Should the decision to approve retail CBDCs lie with the Government rather than the RBNZ?
- The final two stages leading to deployment of retail Central bank 'digital cash' (CBDCs) presume CBDCs are a certainty, how do bank bureaucrats hold such power to decide this?
- The public must have a Digital ID (and supply biometric data) to have a CBDC account. Why is this not recognised?
- Why does the RBNZ use the term 'digital cash' in this 2024 consultation and not central bank digital currencies, which is the standard term used by the Bank for International Settlements?
- What are the implications for free will and autonomy when the key differences between bank digital currency and CBDCs, are that CBDCs enable surveillance of groups of people, are programmable, and allow the targeting of groups of people (through smart contracts)?
- What are the privacy and human rights implications of government agencies directing particular groups of people (based on their Digital ID) to have adjustments made to their CBDC account?
- When do legitimate monitoring functions end, and surveillance activities commence?
- The RBNZ's powers to issue notes and currency are finite as circulating cash is a small amount of the money supply. The RBNZ's greater regulatory powers concern oversight of financial institutions, to maintain trust in the New Zealand dollar, our sovereign currency. Is the need to protect monetary sovereignty misleading if the financial regulator-role is not considered?
- What uncertainties arise when the RBNZ's recently expanded powers are considered *alongside* the potential to create digital money?
- What happens when things 'go wrong' – should the financial markets regulator compete alongside retail banks?
- Why is Accenture, who is closely tied to global digital industry lobbying groups, leading policy development with the RBNZ?
- Why is the use of fiscal policy – whereby the parliamentary budgetary decision-making can be used (through the Appropriations process) to 'inject cash' into the economy through funding infrastructure, education and health (amongst many) not discussed by the RBNZ as a way to reduce inequities?
- The RBNZ states that the circulation of CBDCs would be relatively limited, but over time are these limitations likely to be eroded?

*The human spirit capitulates under conditions of fear and repression, and loss of personal autonomy. Totalitarian regimes typically suppress political resistance by force of arms, covert police operations or threat of official sanctions. All are prone to human rights abuses.* [4]

# 1. INTRODUCTION

To academic and public sector eyes more used to documents with a narrow scope of interest, this discussion paper may appear broad and unappealing. The agencies that are rolling out these technologies discretely compartmentalise their consultation, policy and legislation. This is wrong, because these agencies understand that there is a much bigger picture.

Digital transformation in the *private* sector is one thing. Digital transformation in the *public* sector carries a very different spectrum of risks. The consultancy firms and their collegial organisations in finance and technology (Fintech) are dedicated to driving supporting digital transformation that will unleash economic potential.[5] [6] [7] They're dedicated to driving public-private collaborations.[8] That is their job. To support private sector growth in every way they can, including by diverting costs and risks to governments, and securing government contracts, in order to provide a return to their shareholders. The conflict occurs when these firms become contracted key players driving Digital ID-CBDC execution.

New Zealand society have far less understanding of the potential of this paradigm shift, than the global finance and technology industries known as 'Fintech', and the consultant firms that, revolving-door like, shift between Fintech and government agencies. Together, Fintech, the global Central banks, the Bank for International Settlements (BIS) and the International Monetary Fund (IMF) have been co-ordinating conferences, seminars, white papers and public relations to gain momentum for this paradigm shift.

The Digital ID-CBDC digital infrastructure can potentially undermine, and incrementally erode the power of Parliament and New Zealand citizens. At the same time, government agencies, including the RBNZ, a semi-independent agency and central bank, and the Department of Internal Affairs, the agency who administers digital identity systems, can benefit from increased regulatory and oversight powers.

The problems that PSGRNZ seeks to draw attention to in this paper reflect policy and culture shifts that contribute to what has been termed 'democratic backsliding'. Democratic backsliding involves a shift of public institutions from a partial or soft authoritarianism to a hardening of autocratic rule. This also involves democratic tremors, where illiberal or antidemocratic shocks occur, but nation states appear helpless to deal with the problem.  Towards the end of drafting this paper, a colleague suggested we see what ChatGPT had to say about risks that might arise from the coupling of Digital IDs to CBDCs.

This was the response:

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[4] Joseph, P. (2021). Joseph on Constitutional and Administrative Law, 5th Ed. *Thomson Reuters.* 8.2.2 p.199

[5] Accenture (2024) Digital Transformation. Understanding digital transformation and how our insights can help drive transformational value. https://www.accenture.com/us-en/insights/digital-transformation-index

[6] McKinsey & Company (2018). Unlocking success in digital transformations. https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/unlocking-success-in-digital-transformations

[7] World Economic Forum. Accelerating Digital Transformation for Long Term Growth. https://initiatives.weforum.org/digital-transformation/home

[8] World Economic Forum (January 2023) Digital Transition Framework: An action plan for public-private collaboration. https://www.weforum.org/publications/digital-transition-framework-an-action-plan-for-public-private-collaboration/

## ChatGPT response to question.

While central bank digital currencies (CBDCs) tied to a government-controlled digital identity system offer numerous benefits, they also present several potential dangers:

### 1. Loss of Privacy:

- Financial Surveillance: CBDCs linked to digital identities could enable governments to monitor all transactions, potentially eroding personal financial privacy.

- Data Misuse: The concentration of financial and personal data with the government increases the risk of misuse or unauthorized access.

### 2. Government Overreach:

- Control over Spending: Governments could exert control over how individuals spend their money, imposing restrictions on certain purchases or behaviours.

- Political Abuse: In authoritarian regimes, CBDCs could be used to track and suppress dissent, limiting financial access to those who oppose the government.

### 3. Cybersecurity Risks:

- Centralized Target: A central repository of digital identities and financial transactions becomes an attractive target for cyberattacks, potentially compromising the entire financial system.

- Data Breaches: The risk of data breaches increases with the centralization of sensitive personal and financial information.

### 4. Economic Manipulation:

- Negative Interest Rates: Governments could implement negative interest rates more easily with CBDCs, forcing individuals to spend or invest their money rather than save it.

- Policy Implementation: CBDCs could be used to enforce economic policies more directly, which might lead to unintended consequences and economic instability.

### 5. Exclusion and Discrimination:

- Access Issues: Not all individuals may have equal access to the technology required for CBDCs, leading to financial exclusion of the unbanked or technologically disadvantaged.

- Discriminatory Practices: Data collected through digital identities could be used to discriminate against certain groups, affecting their financial opportunities and services.

### 6. Dependence on Technology:

- System Failures: A heavy reliance on digital infrastructure increases vulnerability to system outages, which could disrupt access to funds and economic activities.

- Technological Divide: The shift to digital currencies may exacerbate the divide between those with access to advanced technology and those without.

### 7. Global Implications:

- Sovereignty Concerns: The adoption of CBDCs could impact monetary sovereignty, especially in smaller countries where external actors might influence the digital currency system.

- International Tensions: The implementation of CBDCs could lead to international tensions and competition over digital currency dominance and standards. While CBDCs offer enhanced efficiency, security, and convenience, the integration with government-controlled digital identity systems requires careful consideration of privacy, security, and ethical implications to mitigate these dangers.

ChatGPT is not trustworthy and can produce plausible but non-sensical text. However, the themes presented by Chat GPT in its response to question, echoes the concerns of many researchers and groups who are robustly qualified to comment on the potential risks and uncertainties that arise when Digital IDs and CBDCs are inter-operable and when '*Central Banks themselves may not have an incentive to pursue the most anonymous form of currency'*.[9] [10] [11] [12] [13] [14] [15]

The private sector has had - and will continue to have, a large partnership role in design, implementation and functioning of digital infrastructure. Their expertise then influences, or captures, problematisation by government actors, who often lack the resources of industry representatives.

It is not difficult to see that the compartmentalisation of communications, consultations and policy and law development, have reflected industries perspectives, and have failed to address, or have disguised, the deeper implications and risks of this proposed policy shift, which is envisaged as a whole of government digital transformation.

It is likely that a deferment to industry (including global banking) would increase as Digital ID-CBDC and other inter-operable advancements accelerate. The shift away from decision-making by Parliament and government agencies would likely occur through legitimating strategies (such as inclusion and the need to protect monetary sovereignty) which communicate a positive public mission and legal means (consultation and parliamentary process). These strategies are unlikely to traverse rights-related risks.

Parliamentary scrutiny can only work if elected members, and the voting public that they serve, have the foresight to recognise the long game, rather than discrete processes which to date, have been compartmentalised by government agencies involved in digital transformation.

Jonathan Boston, David Bagnall and Anna Barry (2019)[16] emphasise the importance for upholding the democratic system:

> *'Parliamentary scrutiny of the executive branch of government is fundamental for political accountability. It provides a crucial means for elected representatives to identify current and projected policy problems, poor decision-making processes, ineffective implementation and corrupt practices. It is equally vital in enabling members of Parliament (MPs) to examine whether a government is adequately safeguarding the interests of current and future citizens. Effective political accountability, in turn, is essential for building and maintaining public trust in the institutions of government and upholding the legitimacy of the democratic system. Robust accountability entails, among other things, the effective exercise of foresight, insight and oversight.'*

If New Zealand people are to have a digital 'twin', a digital wallet that contains all their details, that is held on government servers, and this digital 'twin' is coupled to a Central bank currency account, that is

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[9] Thrasher K (2021) The Privacy Cost of Currency. Mich. J. Int'l L. 403 p.427. https://repository.law.umich.edu/cgi/viewcontent.cgi?params=/context/mjil/article/2111/&path_info=

[10] Anthony N (2024). Digital Currency or Digital Control?: Decoding CBDC and the Future of Money. Cato Institute.

[11] Renieris E (2023). Beyond Data: Reclaiming Human Rights at the Dawn of the Metaverse. The MIT Press.

[12] Ng J (2023). Digital Money, Digital Exclusion: CBDCs and Human Rights. 55 N.Y.U. J. Int'l L. & Pol. 409. https://www.nyujilp.org/wp-content/uploads/2023/05/Commentary2.pdf

[13] Larue L Fontan C and Sandberg J (2020) The promises and perils of central bank digital currencies. Revue de la régulation [En ligne], 28 | 2nd semestre / Autumn 2020, doi 10.4000/regulation.18018

[14] Baeriswyl, R., Reynard, S. & Swoboda, A. Retail CBDC purposes and risk transfers to the central bank. *Swiss J Economics Statistics* 160, 7 (2024). https://doi.org/10.1186/s41937-024-00124-3

[15] Klein, DB (Aug 22, 2023). Big Brother and the Digital Dollar Wall Street Journal Opinion.

[16] Boston J, Bagnall D and Barry A (2019) Foresight, insight and oversight.

held on government servers, that population is in an inherent position of 'forced' total trust to the New Zealand government.

## THE ROLE OF 'TRUST'

While the management consultancy firms and governments promote the trustworthiness of their technologies that will enhance economic potential, they don't highlight obligations in statute, common law and equity that might help members of Parliament and society recognise what is at stake and why 'trust' language has been so comprehensively and persistently inserted into policy papers and dialogue, by the Central banks and by the Fintech industry.

Securing public trust is key. If the public trust the agencies, policies and regulations, this increases the likelihood the public will comply with new policies and laws. Agencies are likely to face fewer barriers in public take-up of the technologies. In this case, digital ID can be more swiftly onboarded. Hence every white paper, every conference presentation, inserts the word 'trust' into their presentation at some stage.

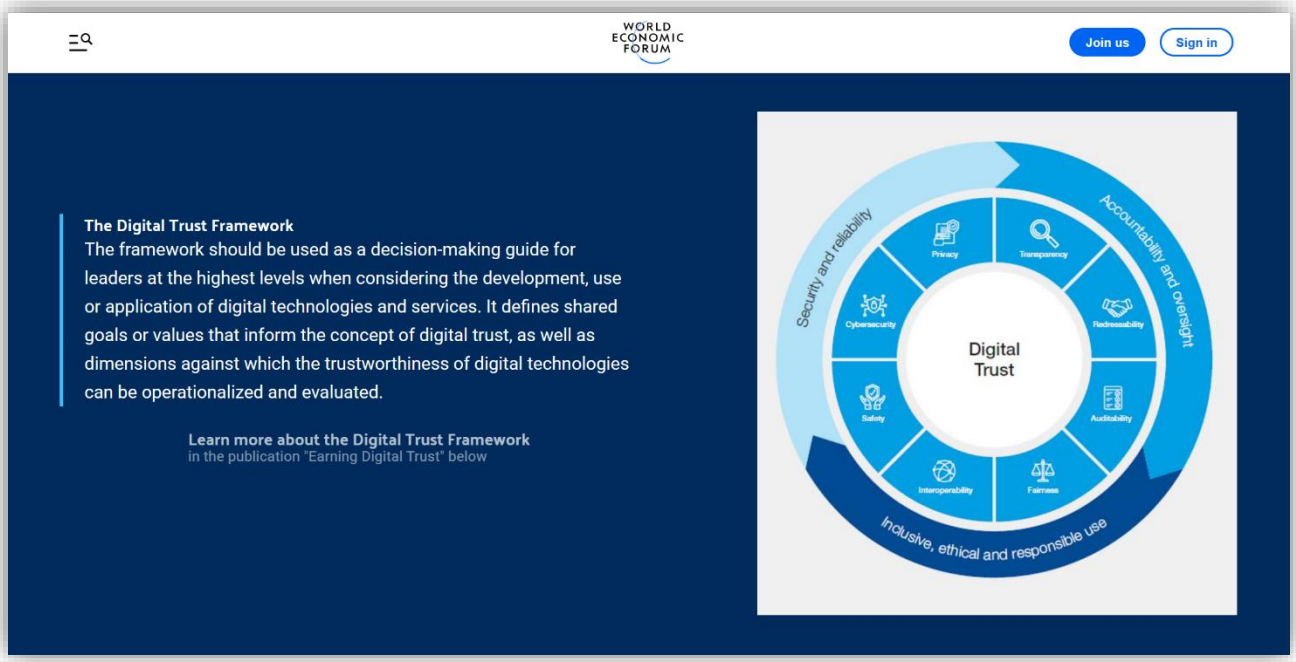



**Figure 2 Trust is repeatedly used in World Economic Forum communications messaging.**

It's understood that there are economic advantages from these systems; the question is, despite the assurances of inclusion and greater access to financial services, will these systems improve wellbeing, or underpin a framework that leads to the abuses of fundamental rights and freedoms? Can they be trusted?

Trust is important because these inter-operable networks are enhanced when control over private money is coupled into that system. The inter-operability and scalability provide the opportunity for public servants and contracting industries to implement fixed, top-down policies, which carry risks as

they can fail to consider individual circumstances, and can potentially encroach on fundamental rights: human, civil and constitutional. As McKinsey and Co explain[17]:

> *'Digital ID can create economic value for countries primarily by enabling greater formalization of economic flows, promoting higher inclusion of individuals in a range of services, and allowing incremental digitization of sensitive interactions that require high levels of trust.'*

For the management consultancies, Accenture, KPMG, PwC and the WEF:

- Digital trust is individuals' expectation that digital technologies and services – and the organizations providing them – will protect all stakeholders' interests and uphold societal expectations and values.
- Only by deciding and acting for digital trust can leaders and organizations meet their obligations to society and individuals.
- The digital trust framework defines shared goals or values that inform the concept of digital trust, including:
    - Security and reliability.
    - Accountability and oversight.
    - Inclusive, ethical and responsible use.

The similarities in language and emphasis adopted by countries when introducing digital identity infrastructure are often markedly similar. Australia has a 'Trusted Digital Identity Framework'.[18] The United Kingdom has a 'UK digital identity and attributes trust framework'[19], while an external stakeholder group in Canada has designed a 'Pan-Canadian Trust Framework™, (PCTF) that:

> *'addresses current and future Canadian digital identity ecosystem innovation needs by verifying the trust of services and networks' … and helps 'secure the inter-operability of public and private sector identity capabilities while prioritizing user-centred design, privacy, security, and convenience of use.'*[20]

Trust has been identified as a central theme by the World Economic Forum which manages a 'Digital Trust Initiative.' Dozens of people are members of the WEF's Digital Trust Community Steering Committee where:

> *'Senior leaders across business, government, and civil society providing strategic guidance and ensuring organizational support at the highest level.'*

Accenture, KPMG and PwC collaborated with the WEF, releasing the report: Earning Digital Trust: Decision-Making for Trustworthy Technologies. This paper introduced the *Digital Trust Framework*[21] [22].

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[17] McKinsey (2019) Digital identification: A key to inclusive growth. https://www.mckinsey.com/capabilities/mckinsey-digital/our-Insights/digital-identification-a-key-to-inclusive-growth?sid=2270270548

[18] Trusted Digital Identity Framework (TDIF) https://www.digitalidentity.gov.au/tdif

[19] Policy paper UK digital identity and attributes trust framework - beta version https://www.gov.uk/government/publications/uk-digital-identity-and-attributes-trust-framework-beta-version#full-publication-update-history

[20] DIACC https://diacc.ca/trust-framework/

[21] Digital Trust Framework. https://initiatives.weforum.org/digital-trust/framework

[22] WEF (November 2022). Earning Digital Trust: Decision-Making for Trustworthy Technologies. Insight Report. In collaboration with Accenture, KPMG and PwC. https://www3.weforum.org/docs/WEF_Earning_Digital_Trust_2022.pdf

Indeed, an exceptionally unprecedented level of trust would be required for the public to acquiesce and obtain both Digital IDs and CBDCs. Yet trials in China and Nigeria have shown that authorities intend to override choice, and require citizens to submit to the trial process.

When Parliament, the executive and the judiciary abide by constitutional and administrative law principles in the development of legislation, the principles help assure that trustworthy processes have resulted in good legislation. Such legislation fulfils the public purpose and protects the wellbeing of the people of New Zealand.

Legislation that is properly implemented through observance of constitutional and administrative law principles and transparent process is in place to guide public life as a rule of law. 'Rule of law means the absence of arbitrary power.' [23]

> *'Governments, holding power in trust for the people, must also be constrained by law, lest they trample upon freedoms and liberties they are bidden to uphold. The guarantee of freedom and liberty enables citizens to lead meaningful and autonomous lives, and realise their individual worth.'*

Public trust is sustained by ensuring that all activity falls within the powers of the legislation that the public sector acts under.

> *The following propositions identify the remit of the rule of law in the 21st century:*
>
> *(1) The rule of law is a fundamental requirement of civil society;*
>
> *(2) The rule of law is a substantive as well as procedural requirement; and*
>
> *(3) The rule of law is a norm of institutional morality for the guidance of public action.*[24]

Trust comes from recognising that public law principles oblige public servants to act fairly and impartially. Government decision-makers must not be biased. For example, public servants:

> *'are expected to uphold the public service ethic (knowledge, fairness, integrity). They must be 'fair, impartial, responsible and trustworthy', and their advice to ministers honest, impartial and comprehensive. A public servant's duty is to the government in perpetuity, not the political party or parties in power at any time.'*[25]

These principles, and many, many more are in place to sustain democracy, and to prevent public servants, including government Ministers, acting in an authoritarian and tyrannical way.

To date the courts and the government have downplayed the role of fiduciary obligations in equity, but PSGRNZ consider that equity must be considered with relation to Digital IDs and CBDCs. The principles and rules of equity are also part of the laws of New Zealand.[26]

PSGRNZ propose that the equity maxim arises in circumstances where a high level of trust is embedded in a relationship. As a result, fiduciary obligations then arise in those circumstances which require high trust. The notion of trust underpins all fiduciary relationships and gives rise to extraordinary duties.

PSGRNZ hope that legal scholars might reflect on the maxim of equity. Equity forms 'a second leg' of a system of law, a moral code, or maxim that complements the common law when circumstances of trust and fiduciary obligation are paramount issues bearing on delivery of justice. Equity rises to the

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[23] Joseph, P. (2021). Joseph on Constitutional and Administrative Law, 5th Ed. Thomson Reuters. 8.1 p.198
[24] Joseph, P. (2021). Joseph on Constitutional and Administrative Law, 5th Ed. Thomson Reuters. 8.2.2 p.199
[25] Joseph, P. (2021). Joseph on Constitutional and Administrative Law, 5th Ed. Thomson Reuters. 10.5.4 p.309
[26] Imperial Laws Application Act 1988

forefront when circumstances bring about what is called 'fiduciary obligations' of one party to another party.

There is every indication that the impact of Digital IDs and CBDCs give rise to such a fiduciary relationship. If the government should control, through legislation and regulatory processes, the digital infrastructure that holds what is considered to be privately held assets, and the transactions that occur therein, then fiduciary obligations may arise.

There is concern that the multiplicity of statutory provisions and secondary regulations have been developed with the top tiers of agencies fully aware of the intended inter-operability. However, any risk assessment or regulatory impact statements have failed to consider the net effect of the inter-operability of these systems.

Essentially, the Crown could have unprecedented oversight over the private transactions through legislative amendments, back-door access and measures taken in emergency situations.

Individuals and groups with concerns relating to the inter-operability of digital identity and CBDCs and the issues that arise may find it difficult to turn to New Zealand's Attorney-General, the Hon Judith Collins for support. As Attorney-General, Collins:

> *'Responsibilities include being the senior Law Officer of the Crown with principal responsibility for the government's administration of the law, the principal legal adviser to the government, the principal plaintiff or defendant on behalf of the government in the courts, and ensuring the operations of government are conducted lawfully and constitutionally, maintaining the relationship of the government with the judiciary, and overseeing the government's role in the administration of the criminal law.'*[27]

However, Collins *also* holds an extraordinary (and unprecedented) ministerial portfolio which grants her expansive powers over whole-of-government surveillance.[28] As Attorney-General, she is also the Minister for Digitising Content, for Defence, and the Government Communications Security Bureau (GCSB), New Zealand's lead organisation for Signals Intelligence (SIGINT) and cyber security and resilience for organisations of national significance. Collins is also the Minister for the New Zealand Security Intelligence Service (NZSIS) and the Minister who is leading the coordination of the Government's Response to the Royal Commission's Report into the Terrorist Attack on the Christchurch Mosques.

Yet Collins as Attorney-General has constitutional responsibilities. She is required to ensure that:

- *the operations of executive Government are conducted lawfully and constitutionally; and*
- *the Government is not prevented through use of the legal process from lawfully implementing its chosen policies.*[29]

These constitutional responsibilities, which support New Zealand's commitment to democratic government under law, are sometimes referred to as 'the Attorney-General's values'.

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[27] Department of Prime Minister and Cabinet (2024) Ministerial portfolio Attorney-General https://www.dpmc.govt.nz/cabinet/portfolios/attorney-general

[28] Parliament (2024) Members of Parliament: Hon Judith Collins https://www.parliament.nz/en/mps-and-electorates/members-of-parliament/collins-judith/

[29] Cullen M (July 22, 2006). The role of the Attorney-General https://www.beehive.govt.nz/speech/role-attorney-general.

To date the courts have limited the extent to which they are prepared to acknowledge the fiduciary relationship between the governed (the public) and the governor, the New Zealand Government.

## SETTING THE STAGE FOR REGULATORY CAPTURE – BEFORE WE COMMENCE?

Parliaments and society have been unaware of the enormity and significance of CBDC projects, much of which has been behind the scenes. As we will discuss, when government agencies are too close and too dependent on external expertise, these relationships can alter how governments assess problems and risks.

The Central banking and Fintech industry has shaped much of the language used by New Zealand in its digital transformation campaigns. Global central banks have been intensively busy releasing CBDC policy papers, developing guidelines, and maturing these policies at global Central bank conferences. The 'Central banks bank' the Bank for International Settlements (BIS)[30], and the International Monetary Fund (IMF)[31] [32] have adopted mentoring and guidance roles to encourage CBDC trials, navigate consultation processes and speed countries towards the adoption of CBDCs.

Persuading people to trust CBDCs and digital identity technology, involves assuring people that the governance *frameworks, regulations and policies* are themselves trustworthy. New Zealand has a new Digital Identity Services Trust Framework Act 2023 (DISTF Act). Indeed, the text of the DISTF Act includes the word 'Trust' some forty times. The connected Cabinet paper, somewhat ironically, mentioned 'trust' four hundred and seventy times. [33]

The DISTF Act doesn't have high-level principles which require that officials act in a trustworthy manner, as we discuss below. Even though trust-based principles informed the consultation, they were dropped in the finished Act.

The regulator of the DISTF Act has very limited powers of investigation, and, from what we can gather, no significant powers beyond responding to individual complaints. If the regulator wishes to investigate a complaint, they must inform industry before they commence the investigation.

The regulator has no active powers, and certainly no funding, to actively survey the global landscape for malfeasance and abuse of power, including surveying court action and any information that arises during the discovery process in foreign jurisdictions. The regulator is effectively toothless and without resourcing, will be consequently, ignorant and uninformed. The structure of the legislation indicates that individuals with problems will face large barriers to any resolution of claims in their favour.

PSGRNZ believe that the policy process used to secure consent and pass the DISTF Act contained many elements of regulatory capture, leading to an absence of principles and a toothless regulatory regime.

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[30] Carstens A. and Nilekani N. (2024) Finternet: the financial system for the future. Bank for International Settlements. https://www.bis.org/publ/work1178.htm

[31] IMF (2022) Behind the Scenes of Central Bank Digital Currency: Emerging Trends, Insights, and Policy Lessons. https://www.imf.org/en/Publications/fintech-notes/Issues/2022/02/07/Behind-the-Scenes-of-Central-Bank-Digital-Currency-512174

[32] IMF's Central Bank Digital Currency (CBDC) Virtual Handbook. https://www.imf.org/en/Topics/fintech/central-bank-digital-currency/virtual-handbook

[33] Cabinet papers. Proactive Release Progressing Digital Identity: Establishing a Trust Framework Cabinet Paper. Page 7. https://www.dia.govt.nz/diawebsite.nsf/Files/Proactive-releases/$file/Combined-Digital-Identity-Proactive-Release.pdf

While preferred stakeholders were privately consulted, larger global risks and the risk of abuse of power by large corporations, who might straddle many interests, were not addressed. [34] It appears that the new Digital Identity Services Trust Framework regulator lacks the powers to actively enquire at a global level, and understand emerging risks. How can the regulator anticipate and steward these risks and have, as Boston et al (2019) discuss, foresight, insight and oversight?

PSGRNZ considers that it is of the essence that New Zealand society and our best public-interest legal minds look 'upstream' to consider the strategic advantage that is secured by the global banking and Fintech institutions who have worked for years to set the framing around risk and benefit and the opportunities presented by inter-operable Digital IDs and CBDCs – if nations then consider risk and benefit from a Fintech-formulated perspective. Such a perspective cannot be impartial and reflects many of the elements of regulatory capture. It is no surprise that the government framing relating to the shift in power enabled by the inter-operability functions, would have left the impact on civil, constitutional and human rights, and the implications under constitutional and administrative law, off the policy table.

It is also pertinent to consider how digital transformation sits within an historic context. The Department of Internal Affairs (DIA's) Digital ID framework and the RBNZ's CBDC campaign follow forty years of market reforms. Policy development is largely revolving around short term economic growth and the preservation of regulatory instruments, which favour the global private sector, leaving little language to prevent longer-term harms.

Professor Philip Joseph has warned that:

> *'The market reforms have reduced the role of government but intensified the need for accountability. … Abuse of dominant position is an abuse, whether it is perpetuated by a publicly owned or a privately owned entity.'* [35]

After forty years, PSGRNZ worries that the public sector lacks a language to articulate the power of both regulation and fiscal policy. These deficiencies ultimately prevent the protection of the health and wellbeing of the New Zealand population, not only because of weak regulation, but by a failure to supply public goods and services, and through the prevention of excess private debt. This hands-off approach which downplays industry harms and increasing debt burdens, inevitably stifles productivity, i.e., creativity and innovation.

Without the knowledge of fiscal policy as a tool, the public sector may therefore believe that the granting of powers to New Zealand's central bank, the RBNZ to distribute CBDCs is a highly beneficial activity.

It should be noted that if CBDCs are not released, many of the technological innovations that are anticipated for CBDCs are relevant to public commerce, and the dominant global banks can lead, with governments ensuring fairness and open-access to smaller players.

The Bank for International Settlements (BIS) April 2024 whitepaper authored by Agustín Carstens and Nandan Nilekani, focusses on the acceleration of a networked, inter-operable financial ecosystem, where financial services (innovation), technological efficiencies and harmonisation occur seamlessly.

Imagined as a 'Finternet' the system is theorised to rest on three 'foundational pillars':

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[34] PSGRNZ. (December 2, 2021). Submission: Digital Identity Services Trust Framework Bill https://psgr.org.nz/component/jdownloads/send/1-root/86-digidentity

[35] Joseph, P. (2021). Joseph on Constitutional and Administrative Law, 5th Ed. 22.6.3 p.946

*(i) an economically sound architecture;*

*(ii) the integration of advanced technologies; and*

*(iii) a robust regulatory and governance structure.*

A regulatory and governance structure in this context does not need CBDCs to work.

Carstens and Nikelani suggest that the system will be tiered – with a tier for commercial bank transactions and a tier for Central bank currency. However, a global financial networked, inter-operable financial ecosystem can be designed without programmable CBDCs. Commercial bank digital currencies can flow through this system in the form of tokenised deposits. [36] Tokens are a digital representation of a claim on an asset in a programmable platform.

There can be simply one tier, for commercial bank transactions. A considerable amount of innovation potential and regulatory pragmatism can be deployed to improve global transaction functionality and ensure low-cost transactions are sustained and improved at retail level.

However, if CBDCs were also to occupy a tier, in one strategic step, an extraordinary amount of institutional power might be redistributed from both Central Banks, democracies and their parliaments as local jurisdictions delegate policy and rulemaking power to the BIS and their global partners.

What might occur in a financial crisis? The Financial Market Infrastructures Act 2021 introduced systemically important financial institution (SIFI) clauses.[37] Which institutional actors would be designated as SIFIs by the RBNZ? Would globally owned institutions take precedence over smaller locally owned institutions? It is possible that in a financial crisis event, nation-states could harmonise in their classing of SIFIs and cede control of financial institutions to international actors, and/or that assets could be frozen. The consequent control over nation-state money and resources could significantly erode state sovereignty.

These issues and more are briefly discussed in this document. PSGRNZ hope that, by producing this document that the RBNZ's current CBDC campaign will not be considered in isolation, but that the many relevant historical, cultural, social and legal issues surrounding this campaign may also be considered as well.

# 2. BACKGROUND: THE RESERVE BANK OF NEW ZEALAND CBDC STRATEGY

## HAS THE MINISTER OF FINANCE BEEN BRIEFED ABOUT THE CONSTITUTIONAL IMPLICATIONS?

This discussion paper considers the current campaign by the Reserve Bank of New Zealand (RBNZ) to secure social license, granting them power to issue retail central bank digital currency (CBDC). This is a

[36] Carstens A. and Nilekani N. (2024) Finternet: the financial system for the future. Bank for International Settlements. https://www.bis.org/publ/work1178.htm

[37] Financial Market Infrastructures Act 2021. https://www.legislation.govt.nz/act/public/2021/0013/latest/whole.html

'key project' of New Zealand's Central bank. Consideration of this expansion of powers must be considered in context with the existing powers and obligations of the RBNZ.

> *'The Reserve Bank is a 'full service' central bank, meaning we have a wide mandate that spans monetary policy, financial stability, cash operations, and financial markets infrastructure. When compared to other jurisdictions, it is clear that the Reserve Bank fulfils a wider mandate than many of our international comparators or counterparts.'*[38]

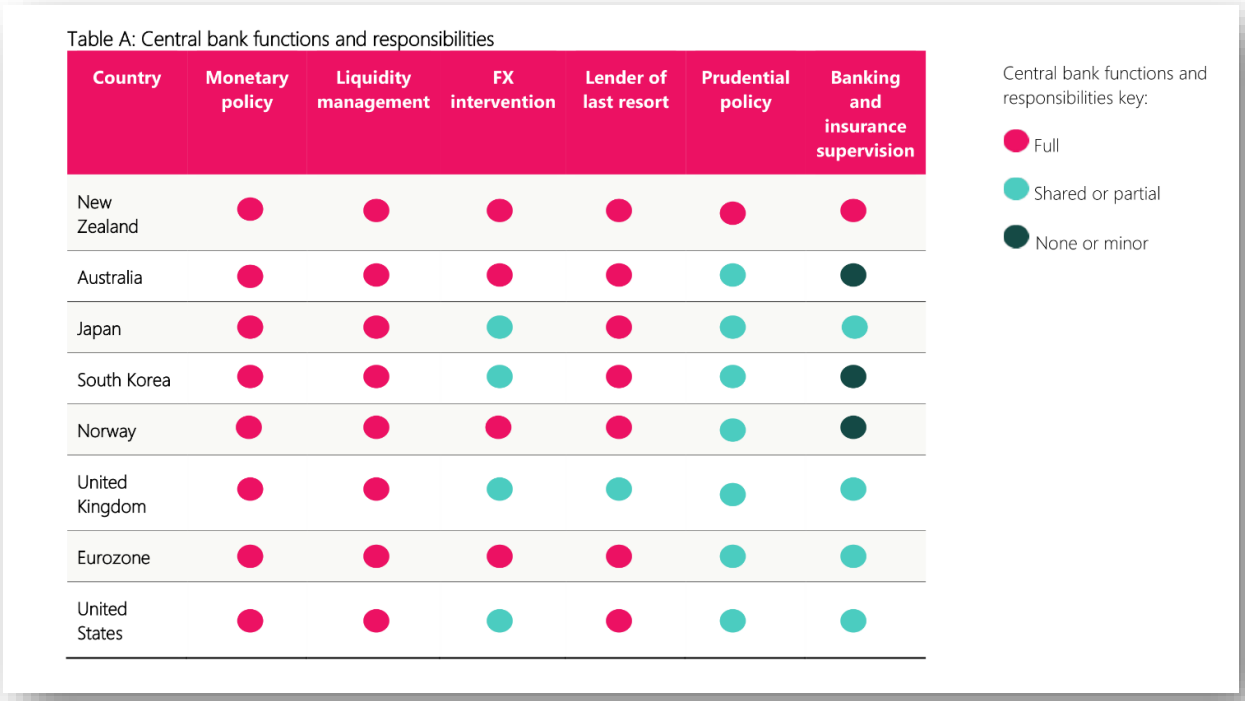


Table A: Central bank functions and responsibilities

| Country | Monetary policy | Liquidity management | FX intervention | Lender of last resort | Prudential policy | Banking and insurance supervision |
|---|---|---|---|---|---|---|
| New Zealand | ● | ● | ● | ● | ● | ● |
| Australia | ● | ● | ● | ● | ◐ | ○ |
| Japan | ● | ● | ◐ | ● | ◐ | ◐ |
| South Korea | ● | ● | ◐ | ● | ◐ | ○ |
| Norway | ● | ● | ● | ● | ◐ | ○ |
| United Kingdom | ● | ● | ◐ | ◐ | ◐ | ◐ |
| Eurozone | ● | ● | ● | ● | ◐ | ◐ |
| United States | ● | ● | ◐ | ● | ◐ | ◐ |

Central bank functions and responsibilities key:

● Full

◐ Shared or partial

○ None or minor

**Figure 3 RBNZ Briefing for the Incoming Minister He Whakamārama mō te Minita Whakauru (2023).**

There does not seem to be an RBNZ policy document that publicly discloses the multi-year CBDC strategy. The RBNZ state on the Digital Cash internet page:

> *'We're progressing our digital cash work through 4 stages. We're currently in stage 2.'*[39]

We might ask, as civil society, where is the document that outlines the four stages? We have not been able to find high level documents transparently disclosing the RBNZ's intent, and the constitutional implications to Cabinet or members of Parliament. The RBNZ website only briefly states:[40]

> ***Stage 3 -*** *We'll develop prototypes to test how digital cash could work in the real world. During Stage 3, you'll have more opportunities to tell us what you think about digital cash.We expect Stage 3 to be completed between 2028 and 2029.*

[38] RBNZ (Nov 27, 2023). Briefing for the Incoming Minister He Whakamārama mō te Minita Whakauru. https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/briefings/briefing-to-the-incoming-minister-2023.pdf

[39] RBNZ (2024) Digital Cash. https://www.rbnz.govt.nz/money-and-cash/digital-cash

[40] RBNZ (2024) Why we're looking into digital cash. What stage are we at? https://www.rbnz.govt.nz/money-and-cash/digital-cash/why-were-looking-into-digital-cash/#AKRA1L9B9U6iZt7SPz3zWA

***Stage 4 -*** *We would introduce digital cash to Aotearoa New Zealand. We expect this to be around 2030.*

What does The Treasury know? The Treasury's Briefing to the Incoming Minister of Finance does not disclose the RBNZ Four Stage programme[41]. The RBNZ's Briefing to the Incoming Minister of Finance contained minimal information on what RBNZ refer to as a 'key project'.[42]

But if they have only been informed by the RBNZ, – have the full constitutional implications of such a transfer of powers to a Central bank with already extensive regulatory and oversight powers been considered?

How can bank bureaucrats so easily presume they will take such powers? The RBNZ provide links to a global 'CBDC Tracker' to communicate and manufacture consent that CBDCs are 'normal' and a logical outcome.[43] The CBDC Tracker is a promotional tool put in place by global consultants (Boston Consulting Group and Ernst and Young) and lobby group the Digital Euro Association.[44]

Together with their Central bank peers, the RBNZ have been engaged in CBDC policy development for at least 6 years.[45]

Over this same period, many white papers discussing CBDCs, digital identity architecture and digital infrastructure have been published by the industry consortium the World Economic Forum, working closely with transnational consultancy firms and the global financial sector.

The World Bank Group, in contrast, has led global framing to secure political consent and for digital IDs. The World Bank as a 'central node in a more extensive global network of digital ID promotion' through their Identification for Development (ID4D) initiative has acted as an 'idea generator, data collector, convenor, and trusted advisor to national governments' releasing white papers, providing technical assistance and funding (in low-income countries) to design and implement Digital ID systems. [46]

How much does the Minister of Finance (Minister Responsible for the Treasury) know about CBDCs? There are no Treasury documents discussing CBDCs, yet The Treasury approves the RBNZ long-term funding. Unlike most government agencies, the RBNZ does not receive a budgetary allocation via the annual Appropriations process. The Appropriations process promotes transparency. The public can search for and understand how spending is allocated on the Treasury website.[47]

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[41] The Treasury. February 2024. Briefing to the Incoming Minister of Finance. https://www.treasury.govt.nz/sites/default/files/2024-01/bim-finance-2023.pdf

[42] RBNZ (Nov 2023) Briefing for the Incoming Minister. https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/briefings/briefing-to-the-incoming-minister-2023.pdf

[43] RBNZ (2024) Why we're looking into digital cash. We're not the only central bank looking at digital cash https://www.rbnz.govt.nz/money-and-cash/digital-cash/why-were-looking-into-digital-cash/#AKRA1L9B9U6iZt7SPz3zWA

[44] https://cbdctracker.org/

[45] Bascand, G 2018. In search of gold: Exploring central bank issued digital currency. A speech delivered to The Point Conference in Auckland. https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/speeches/2018/in-search-of-gold.pdf

[46] June 2022. Paving a Digital Road to Hell A Primer on the Role of the World Bank and Global Networks in Promoting Digital ID. Digital Welfare State and Human Rights Project. Center for Human Rights and Global Justice. NYU School of Law. Page 10. https://axelkra.us/wp-content/uploads/2022/07/Report_Paving-a-Digital-Road-to-Hell.pdf

[47] The Treasury (2024). Historical Vote Information. https://www.treasury.govt.nz/publications/budgets/vote-information

Instead, the RBNZ manages their money differently, by firstly coming to an agreement with Treasury, and secondly signing a letter of expectation. None of the Letters of Expectation over the past 5 years (2019[48], 2020[49], 2021[50], 2022[51], 2023/4[52]) have documented any expectation around transition to CBDCs. A search for 'CBDC' on The Treasury website fails to access any content.

The 2020-2025 RBNZ Funding proposal to The Treasury which preceded the Letters of Expectation discussed the Future of Cash work but did not include any reference to CBDCs or digital cash. [53] Instead, the proposal 'euphemised' discussing expectations (from somewhere) that the bank might engage in green finance and hinting later:

> *'We need to build our policy capability and capacity to support the changes arising from the Future of Cash programme and keep ahead of the developments in the FinTech sector.'*

The public can only guess that the consequent funding agreement[54] is that which has facilitated the funding of the CBDC campaign and payments to Accenture via the 'Future of Cash' project.

PSGRNZ has struggled with barriers in my effort to understand exactly how much both the Minister of Finance and Cabinet comprehend. Following a surprising advertisement on December 16, 2023 on LinkedIn for a Senior Project Manager – CBDC and Cash Trials Projects[55], the intention of which had not been publicly disclosed, Jodie Bruning directed a relatively simple request under the Official Information Act to the Department of Prime Minister and Cabinet (DPMC):

> *'All advice/memos/reports/communications between Prime Minister and/or Cabinet and the Minister of Finance (or acting Minister of Finance) which refer to or discuss central bank digital currencies (CBDCs). From March 2022 – December 16 2023.'*

Bruning's December 2023 Official Information Act request was transferred to the RBNZ and then onto the Department of Internal Affairs (DIA). The DIA is 'deemed to be' the department responsible for controlling access and release of emails of Ministers of the Crown.[56] The DIA is also the responsible agency for Digital ID policy and the digitisation of government.

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[48] RBNZ (2019) Letter of Expectations. https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/letters-of-expectation/letter-of-expectations-2019.pdf

[49] https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/letters-of-expectation/letter-of-expectations-2020.pdf

[50] https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/letters-of-expectation/letter-of-expectations-2021.pdf

[51] https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/letters-of-expectation/letter-of-expectations-2022.pdf

[52] https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/letters-of-expectation/letter-of-expectations-2023-2024.pdf

[53] RBNZ 2020-2025 Funding Proposal. P.33 https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/funding-agreements/2020-25-funding-proposal.pdf

[54] RBNZ (Jun 16, 2020) 2020-25 Funding Agreement Between The Minister of Finance And The Governor of the Reserve Bank of New Zealand. https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/funding-agreements/2020-25-funding-agreement.pdf

[55] RBNZ (Dec15, 2023). Senior Project Manager - CBDC and Cash Trials Projects https://www.linkedin.com/jobs/view/senior-project-manager-cbdc-and-cash-trials-projects-at-reserve-bank-of-new-zealand-3783970854/

[56] FYI.org. Official Information Act Request. Central Bank Digital Currencies (CBDCs) DPMC privy to discussions. DPMC: OIA-2023/24-0371; DIA OIA request 2324_045 https://fyi.org.nz/request/25205/response/97617/attach/5/OIA%202324%200590%20Extension%20Letter.pdf

A response finally came in May 2024. There is no evidence that Cabinet was briefed over this time.[57]

In context of the inter-operability of a broader ecosystem, it is inappropriate that the DIA would control access to Ministerial emails in the context of CBDCs. New Zealand's Department of Internal Affairs (DIA) administered Digital Identity legislative framework, and the RBNZ CBDC policy papers presume a central, structural role for the private financial and technology (Fintech) services sector in the support of services relating to Digital ID and (at least) in the co-development of ledger technologies, including smart contracts for CBDCs.

The DIA is responsible for developing Digital ID policy and administering related legislation.[58] CBDCs and Digital ID are interconnected pieces of a broader framework, as the Accenture dossier explained.[59]

The DIA administers both the Digital Identity Services Trust Framework Act, and the Electronic Identity Verification Act 2012. The Digital Identity Services Trust Framework Act charges the DIA as regulator of digital identity services providers. The Electronic Identity Verification Act 2012 positions the DIA as the department responsible for the back-end management of personal data, which includes RealMe. The DIA negotiate contracts with corporations relating to digital government.

The DIA administers community 'pokie' (gambling machine) grants in New Zealand.[60] A grant cannot be applied for without the individual who applies entering their RealMe identity.[61] Passport or drivers licenses will not be accepted.

Who really knows – outside of the DIA, RBNZ and Accenture – the full extent of the CBDC and Digital ID plans?

## KEY ADVISER: ACCENTURE

RBNZ and global consultancy firm Accenture lead RBNZ's multi-year CBDC strategy and have set the scope of reference.

'Professional services company' Accenture are the RBNZ's 'key technical adviser. Accenture is a Fortune Global 500 Company with a multibillion dollar income (revenue F/Y 2023 USD64 billion). Accenture's primary income comes from 'enhancing commercial competitiveness'. Accenture's key 'partners' include: Adobe, Alibaba, Amazon Web Services, Blue Yonder, Cisco, Databricks, Dell, Google, HPE, IBM RedHat, Microsoft, Oracle, Pegasystems, Salesforce, SAP, ServiceNow, Snowflake, VMware, Workday and many others.'[62]

Shareholders received 16% compound annual total return over the past 5 fiscal years.[63]

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[57] DIA (May 16, 2024) FYI.org Official Information Act request OIA2324-0590 https://fyi.org.nz/request/25205/response/100700/attach/5/OIA%202324%200590%20response.pdf
[58] Department of Internal Affairs, Annual Report 2023. https://www.dia.govt.nz/diawebsite.nsf/Files/Annual-Report-2022-23/$file/Annual-Report-2022-23.pdf
[59] Accenture (2024) Central Bank Digital Currency - Strategic Design Insights Dossier. Published by the Reserve Bank of New Zealand and Accenture. https://consultations.rbnz.govt.nz/money-and-cash/digital-cash-in-new-zealand/user_uploads/cbdc-insights-dossier-for-public-1.pdf
[60] DIA Granted Website. You're in control of the data https://granted.govt.nz/
[61] DIA Community Matters Website. How does my community group make a request in the grants management system? https://www.communitymatters.govt.nz/ask-us/view/1804
[62] Accenture Fact Sheet. https://newsroom.accenture.com/fact-sheet
[63] Accenture 360 degrees Value. https://investor.accenture.com/

Accenture is actively engaged on CBDC and Digital ID projects globally but it is very evident that issues of constitutional and administrative law and the public interest, remain outside the companies purview.[64] Accenture staff (Alumni) move in and out of the public and private sector, and staff have collegial relations with staff globally.

Accenture has played an extraordinary role in developing Digital ID policy, as outlined below.

## CBDC STAGE 1 CONSULTATION: DECEMBER 2021- FEBRUARY 2022

In December 2021 an issues paper 'The Future of Money - Central Bank Digital Currency' was released providing public feedback.[65]

> *'For example, a token-based CBDC could enable the execution of contracts or certain actions to be 'programmed' into the money itself, thereby reducing the need for manual or third-party processing and generating efficiencies.'*

The CBDC issues paper generated wide public interest and received the greatest number of responses by the public. However, any public concerns relating to the issues of tokenisation, smart contracts and programmability, were not disclosed in the bank's Summary of Responses.[66]

### 1.2 Number of responses

In total, 6,882 submissions were received across all three papers. Of these, 140 were received in relation to the stewardship paper, 6,404 in relation to the CBDC paper, and 338 in relation to cash (refer to Table 1).

***Table 1: Number of responses***

| | Emailed (or other written) and/or oral submissions | Responses to the online survey tool | Total responses |
|---|---|---|---|
| Stewardship of money and cash | 14 | 126 | 140 |
| Central Bank Digital Currency (CBDC) | 556 | 5,848 | 6,404 |
| Cash system redesign | 47 | 291 | 338 |
| Future of Money: all papers | 617 | 6,265 | 6,882 |

**Figure 4. Future of Money – Te Moni Anamata :Summary of responses to our 2021 issues papers. Page 4.**

[64] Accenture. The (R)evolution of money III: CBDC is here, careful design needed now DLT Empowered Digital Currencies

[65] RBNZ December 6, 2021. The Future of Money – Central Bank Digital Currency. Page 20. https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/consultations/banks/future-of-money/cbdc-issues-paper.pdf

[66] RBNZ April 2022. Future of Money – Te Moni Anamata :Summary of responses to our 2021 issues papers. https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/consultations/future-of-money/future-of-money-summary-of-responses.pdf

On December 7 2022 the RBNZ published another issues paper: The Future of Money – Private Innovation[67]. The paper noted:

> *'To achieve our stewardship objectives, the Reserve Bank's core tool to influence the provision of private money is our ability to issue central bank money. Central bank money must remain relevant as a value anchor, a means to implement monetary policy, and a lender of last resort....*
>
> *A CBDC would be a digital publicly-provided counterpart to private money, which is already digital. It may make central bank money a more effective lever to incentivise competition and innovation, and potentially lessen the need for more stringent regulation.'*

This RBNZ paper did discuss inter-operability and smart contracts. There were 50 responses to this paper. The Summary of Responses does not outline whether respondents were concerned about inter-operability and programmable smart contracts.[68]

While the RBNZ disclosed in the 2021 Summary paper that there was evident concern by the public (about cash) and retail bank sector (about the technical complexity involved), the RBNZ does not show data which highlights the proportion of respondents that express negative or positive responses. It does not disclose the extent of concern relating to the programmability potential, which is the key factor that differentiates digital currency that is used by the public in retail banking today from CBDCs.

## CBDC STAGE 2 CONSULTATION: APRIL-MAY 2024

On April 17, 2024, the Reserve Bank of New Zealand (RBNZ) opened consultation on 'Digital Cash'. A Digital Cash Consultation paper[69] was released, accompanied by four Consultation notes.[70] [71] [72] [73] In addition, a 2023 Digital Cash Storyboard which had been earlier presented to the RBNZ board was

[67] RNBZ December 2022 Issues Paper: The Future of Money – Private Innovation. https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/consultations/future-of-money/fom-private-innovation.pdf
[68] RBNZ (2022) Summary of Submissions and Next Steps on the Private Innovation in Money Issues Paper https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/consultations/future-of-money/responses-to-private-innovation-submissions.pdf
[69] RBNZ (Apr 17, 2024). Digital cash in New Zealand. Consultation paper. https://consultations.rbnz.govt.nz/money-and-cash/digital-cash-in-new-zealand/user_uploads/digital-cash-in-nz.pdf
[70] RBNZ (April 17, 2024). Designing a digital cash ecosystem. Digital Cash Consultation Note, #1. https://consultations.rbnz.govt.nz/money-and-cash/digital-cash-in-new-zealand/user_uploads/ecosystem-design-note_final-1.pdf
[71] RBNZ (April 17, 2024). Innovation and reliability opportunities for digital cash. Digital Cash Consultation Note, #2 https://consultations.rbnz.govt.nz/money-and-cash/digital-cash-in-new-zealand/user_uploads/innovation-and-reliability-opportuntities-for-digital-cash_final-1.pdf
[72] RBNZ (April 17, 2024). Inclusion opportunities for digital cash Digital Cash Consultation Note #3. https://consultations.rbnz.govt.nz/money-and-cash/digital-cash-in-new-zealand/user_uploads/inclusion-opportunities-for-digital-cash_final-1.pdf
[73] RBNZ (April 17, 2024). Designing privacy into digital cash. Digital Cash Consultation Note #4. https://consultations.rbnz.govt.nz/money-and-cash/digital-cash-in-new-zealand/user_uploads/designing-privacy-into-digital-cash.pdf

published, as well as an Accenture Dossier, and a 'User needs for money management and payments research report[74]. These latter three papers are listed as supporting reports of the overall consultation.

Note 3 demonstrates that the RBNZ is well aware of the fact that the 'average' Kiwi is financially struggling. This is a broader governance issue, a political and social issue. The RBNZ envisages digital wallets and CBDCs as an 'onramp to broader inclusion in New Zealand'.

Privacy concerns extend beyond simple information as Note 4 acknowledges. The RBNZ recognise that privacy is contextual, and that the public's feelings concerning their sense of control, a feeling of freedom from harm are not well addressed, in New Zealand law. However these concerns, which can develop into broader human rights abuses, only very poorly translate into law.

> *'Concerns about privacy also span to feelings of safety, trust, autonomy and being in control. This note uses the concept of 'contextual privacy' to capture these broader feelings. These include feeling 'free from harm' due to the misuse or sharing of your information and feeling 'free to control' what information you reveal, who holds it, how it is used and more.'*[75]

A small forum of exclusive members 'key stakeholders' have participated in RBNZ policy development, in a 'Interdisciplinary CBDC Forum.'[76]

The Digital Cash Consultation paper states that 'digital cash is a type of central bank digital currency'. The RBNZ does not explain why they have diverted from typical central bank digital currency (CBDC) nomenclature. 'CBDC' is the term used by Central banks and the 'banks bank', the Bank for International Settlements (BIS), and the International Monetary Fund (IMF).

Accenture prepared the Central Bank Digital Currency Strategic Design Insights Dossier[77] for the RBNZ. The dossier highlights facts recognised at global level, but yet to be addressed in Parliament or in the RBNZ 'Digital Cash' documents. CBDCs will function in a broader ecosystem:

> *'NZ has an opportunity to develop world leading CBDC capability, addressing inclusion, resilience and monetary sovereignty, that maximises synergies with other national digital initiatives, such as Digital ID, CDR[78] and Real Time Payments through inter-operability.'*

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[74] GravitasOPG and One Picture (Aug 2023) User needs for money management and payments, Qualitative research report. Commercial in Confidence. https://consultations.rbnz.govt.nz/money-and-cash/digital-cash-in-new-zealand/user_uploads/cbdc-consumer-research-report_for-publication-13122023-1.pdf

[75] Note 4 page 6.

[76] RBNZ (Nov 2023). Official Information Act Request oia2324-026-Ref #20704469 v1.4 https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/oias/2024/oia2324-026-information-regarding-cbdc.pdf

[77] Accenture. Central Bank Digital Currency - Strategic Design Insights Dossier.

[78] CDR (Consumer Data Right). *'The main goal of CDR is to ensure that the consumer has full control of their data.' 'In 2022, the Government announced a new Consumer Data Right (CDR) framework (Consumer data right |Ministry of Business, Innovation & Employment (mbie.govt.nz)) for the New Zealand banking sector in order to push towards open banking. Open banking allows customers to 'securely share their own banking data with trusted third parties through standardised technology'. CDR legislation is expected to be passed in to be passed in 2024. The main goal of CDR is to ensure that the consumer has full control of their data.'* See Accenture Dossier.

## THE RBNZ CBDC CAMPAIGN DOWNPLAYS THE PROGRAMMABILITY OF CBDCS

Although central bank promotional literature notionally supports transparency and accountability, digital systems are opaque. Digital ledger technology, banking rules and guidelines and technology design can be altered over time to act in favour of global financial institutions and obfuscate access to financial assets, making it difficult for individuals to lay claims on assets.[79]

Policy papers by the Bank for International Settlements (BIS), and the International Monetary Fund (IMF) (discussed below) flesh out the implications of inherent programmability and the opportunities that are enabled by the use of smart contracts. Central banks are working with the BIS on retail CBDC development. However, the RBNZ and Accenture has downplayed these so-called benefits and failed to *inform* and to meaningfully engage in the consultation process with the public on this most controversial facet of CBDCs, which is also the key difference between bank digital currencies and CBDCs.

But where do the contracts start and stop? How can Ministers of the Crown have oversight, and demonstrate to the public that these processes are accountable, fair and trustworthy?

> *'Crown entities engaged in commercial activity are in the same position as SEOs. Their decisions affected with a public interest will be reviewable on broader grounds than fraud, corruption or bad faith.[80]'*

The RBNZ April 2024 consultation Note no.1[81] acknowledges that they have a 'top-down policy-led approach to designing digital cash'. This understates the impact and influence that arises from the programmability functions that can be embedded and updated into the digital network infrastructure. The RBNZ confusingly adopts the term 'rich functionality' instead of the clearer 'programmability'. As the RBNZ describe, *rich functionality* include:

- Real time payments. Proxy/Alias functions. Point of Sale (PoS) acceptance.
- Consent/permissions. Joint control options. Cash/Digital cash interaction.
- Conditional (programmable) payments. Smart contracts.

While 'non-functional' requirements (also confusingly titled) include availability, extensibility (i.e. the capacity to integrate new functionalities), reliability, scalability, inter-operability and portability. These all might be considered 'function' categories in a different world.

Note no.1[82] states that 'There would be no 'programmable *money'*, claiming that only programmable *payments* will be enabled:

> *' "Programmable money" is where the digital currency itself features limits or constraints as to how it can be used, for example by including expiry dates, or constraints on where or what it can be spent on. Our preliminary judgement is to align with most countries and rule this out, as it could undermine the uniformity of money by making digital cash akin to a voucher. It is important to note that this is a separate design consideration to 'programmable payments', where smart contracts and other programmable features are applied by users and service providers that provide for the*

[79] Webb, DR. The Great Taking. https://thegreattaking.com/read-online-or-download
[80] Joseph, P. (2021). Joseph on Constitutional and Administrative Law, 5th Ed. 22.6.3 p.947
[81] RBNZ (April 17, 2024). Designing a digital cash ecosystem. Digital Cash Consultation Note, #1.
[82] RBNZ (April 17, 2024). Designing a digital cash ecosystem. Digital Cash Consultation Note, #1.

*automation of activities and processes should certain pre-agreed conditions be met – we think this will be an important digital cash capability.'*

It is not only governments that understate the programmability functions and the inter-operable power of smart contracts on tokenised ledgers. Public facing internet articles by Fintech and consultancy firms with deep networks in digital infrastructure policy can downplay the programmability aspect in their communication literature and video presentations, leaving the public largely uninformed.[83]

The Accenture document has quietly noted the benefits of smart contracts in the RBNZ document but downplayed just how extensive this might be, which is expansively addressed in global meetings with Central banks and Fintech:

*'CBDC would accelerate the transition to a digital economy, while accelerating financial inclusion. Smart contracts can be written to enable new functionality and spur innovation. Authorised entities could also programme capabilities into the money itself.'*

Smart contracts are discussed in the Consultation Note #2 but only in relation to consensual retail environments. [84] The document exclusively refers to smart contracts using a transactional retail case study, where the individual is fully aware and autonomous. The Accenture document and Note #2 fail to discuss the implications of public-sector enabled smart contracts and their potential to erode autonomy, rights and freedoms.

The RBNZ have included as a Supporting Report, an August 2023 research report by GravitasOPG and One Picture. One hundred and fifteen people participated. The survey included in-depth interviews and 3 workshops. The survey and research report did not concern itself with controversial or contested issues such as the programmability of digital cash (CBDCs) and the capacity for Central banks to increase their surveillance of money flows via platforms or ledgers should retail CBDCs be in use. The qualitative research was used to 'inform understanding of current needs, money and payments attitudes and behaviours, and to develop personas to describe consumer types.' [85]

## RBNZ: 'A SIGNIFICANT TURNING POINT IN OUR HISTORY'

The RBNZ is a full-service Central bank. The RBNZ's current CBDC campaign cannot be considered in isolation from their 'broader-than-most Central banks' mandate. Recent extensive changes further broadening the RBNZ's powers must also be considered alongside the current CBDC campaign. As RBNZ Deputy Governor and General Manager Financial Stability Christian Hawkesby stated in 2022:

*'As an institution we are going through the most significant changes since the Reserve Bank of New Zealand reforms of the 1980s'.* [86]

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[83] What is central bank digital currency (CBDC)? https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-central-bank-digital-currency-cbdc#/

[84] RBNZ (April 17, 2024). Innovation and reliability opportunities for digital cash. Digital Cash Consultation Note, #2

[85] GravitasOPG and One Picture (Aug 2023) User needs for money management and payments, Qualitative research report. Commercial in Confidence. https://consultations.rbnz.govt.nz/money-and-cash/digital-cash-in-new-zealand/user_uploads/cbdc-consumer-research-report_for-publication-13122023-1.pdf

[86] Prior, M. (2022) Our Transformation as a Prudential Regulator. A speech delivered to the Financial Services Council in Auckland on 22 September 2022 Address by Christian Hawkesby, Deputy Governor and General Manager Financial Stability. https://www.bis.org/review/r220922a.pdf

The reforms were initiated following International Monetary Fund (IMF) Article IV advice[87] in 2017 (The IMF advises on interest rate changes and is a lender of last resort).

Following the IMF mission, in April 2017, the Government announced it would undertake a two-phased Review of the Reserve Bank of New Zealand Act 1989 (the Review) to modernise the monetary and financial stability policy framework.[88] In May 2017 the RBNZ released a Regulatory Impact Statement[89] proposing increasing regulatory and oversight powers over Financial Market Infrastructure (FMI):

- the joint regulators to have information gathering powers for all FMIs, to monitor the broader sector and identify potential systemic risks.
- an FMI that is identified as being significant is required to be designated under a revised designation regime.
- joint regulators to have enhanced regulatory oversight powers for designated FMIs, including powers to set regulatory requirements, oversee FMIs' rules, investigative and enforcement powers, and crisis management powers.
- where relevant, designated FMIs to have access to the legal protections around settlement finality and netting that currently exist under the Part 5C of the RBNZ Act.

Two phases were planned:

- ***Phase 1:*** *Reserve Bank of New Zealand (Monetary Policy) Amendment Act* (Royal assent December 20, 2018). The full provisions of the Act came into force April 1, 2019. Select Committee received 14 submissions.[90] This brought into law the dual mandate: price stability and contributing to maximum sustainable employment – and established a governance board, the Monetary Policy Committee (MPC), which replaced the single decision-maker model.
- ***Phase 2:*** which involved a review of RBNZ governance arrangements and funding model.

Phase 2 involved:

- December 4, 2019. Financial Market Infrastructures Bill departmental disclosure statement released.[91]
- December 12, 2019. Hon Grant Robertson introduces the Financial Market Infrastructures Bill. On February 12 2020, the Bill was referred to Select Committee, with the closing date for submissions August 2020. Select committee received 9 submissions.[92]

[87] New Zealand: Financial Sector Assessment Program: Financial System Stability Assessment. Country Report No. 2017/110. ISBN/ISSN:9781475598834/1934-7685. https://www.imf.org/en/Publications/CR/Issues/2017/05/08/New-Zealand-Financial-Sector-Assessment-Program-Financial-System-Stability-Assessment-44886

[88] The Treasury. Information Release, 5 April 2019. https://www.treasury.govt.nz/publications/information-release/phase-1-reviewing-reserve-bank-act

[89] RBNZ, May 2017. An Enhanced Oversight Framework for Financial Market Infrastructures. https://www.treasury.govt.nz/sites/default/files/2017-01/ris-rbnz-eoff-may17.pdf

[90] Reserve Bank of New Zealand (Monetary Policy) Amendment Bill. https://bills.parliament.nz/v/6/bc24f028-3b3d-4c9c-8708-d5857e4570d7?Tab=reports

[91] https://disclosure.legislation.govt.nz/bill/government/2019/212

[92] Financial Market Infrastructures Bill Government Bill As reported from the Finance and Expenditure Committee.
Commentary https://selectcommittees.parliament.nz/view/SelectCommitteeReport/7df29ef0-464b-485f-842f-ea2195fe7afb

- The *Financial Market Infrastructures Act* came into force on May 10, 2021.
- Reserve Bank of New Zealand Bill introduced July 28, 2020 introducing reforms in the RBNZ's institutional and governance arrangements, introducing an executive board; and financial stability role. Select Committee received 31 submissions. [93]
- The *Reserve Bank of New Zealand Act 2021* came into force on July 1, 2022. It re-positioned the RBNZ's high-level objectives, functions, powers, accountability and governance arrangements, and funding model. Royal assent July 1, 2022. Select Committee received 31 submissions.[94]
- Deposit Takers Act 2023. A single, regulatory regime for all bank and non-bank deposit takers (e.g. building societies and finance companies). Establishes a deposit insurance scheme for New Zealanders. Royal assent July 6, 2023. Select Committee received 43 submissions.[95]

In 2022, then RBNZ Deputy Governor and General Manager Financial Stability Christian Hawkesby described this in the context of a 'broadening of expectations'. This included expectations to be responsible for the prudential regulation of more than just banks; to use more than market discipline; to be fully prepared for crisis management; to recognise the role financial stability plays in enabling financial inclusion and financial innovation; to take a long-term perspective on issues like climate change; to work collaboratively with other regulators, both domestically and internationally.[96] Funding changes included permitting the RBNZ to collect levies.

### The RBNZ 'have a wider range of responsibilities than other central banks.'[97]

The RBNZ has more concentrated regulatory power than the Australian Central bank. As Governor Adrian Orr explained in the annual review[98]:

> *'We are a full-service bank. In Australia we would be the [Reserve Bank of Australia] RBA and [Australian Prudential Regulation Authority] APRA plus a little of [Australian Securities & Investments Commission] ASIC put together, just to give you the scale and scope of what we do at Te Pūtea Matua [RBNZ]. We are uber connected globally and domestically. Our Council of Financial Regulators is a very meaningful group now with very deliberate work-together strategies, including the co-operation and co-ordination around our regulatory behaviours. Trans-Tasman Banking Council, we've talked about the sharing of information. We work very closely together now, and globally the BIS, the IMF, the South Pacific Group of Governors has been an important network for us, and the executive members of the East Asia Pacific Group.'*

[93] https://bills.parliament.nz/v/6/a9e0b259-2742-41f6-b326-511f06c4b452?Tab=history
[94] Reserve Bank of New Zealand (Monetary Policy) Amendment Bill https://bills.parliament.nz/v/6/bc24f028-3b3d-4c9c-8708-d5857e4570d7?Tab=reports
[95] Deposit Takers Act 2023. https://bills.parliament.nz/v/6/11fa96a7-e6bd-4a53-8516-d4d26c059072?Tab=sub
[96] Prior, M. (2022) Our Transformation as a Prudential Regulator. A speech delivered to the Financial Services Council in Auckland on 22 September 2022 Address by Christian Hawkesby, Deputy Governor and General Manager Financial Stability. https://www.bis.org/review/r220922a.pdf
[97] RBNZ 2020-2025 Funding Proposal. https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/funding-agreements/2020-25-funding-proposal.pdf
[98] Finance and Expenditure Committee. 2022/23 Annual review of the Reserve Bank of New Zealand, February 11, 2024. 2024/02/12 https://vimeo.com/showcase/10758103/video/912104765

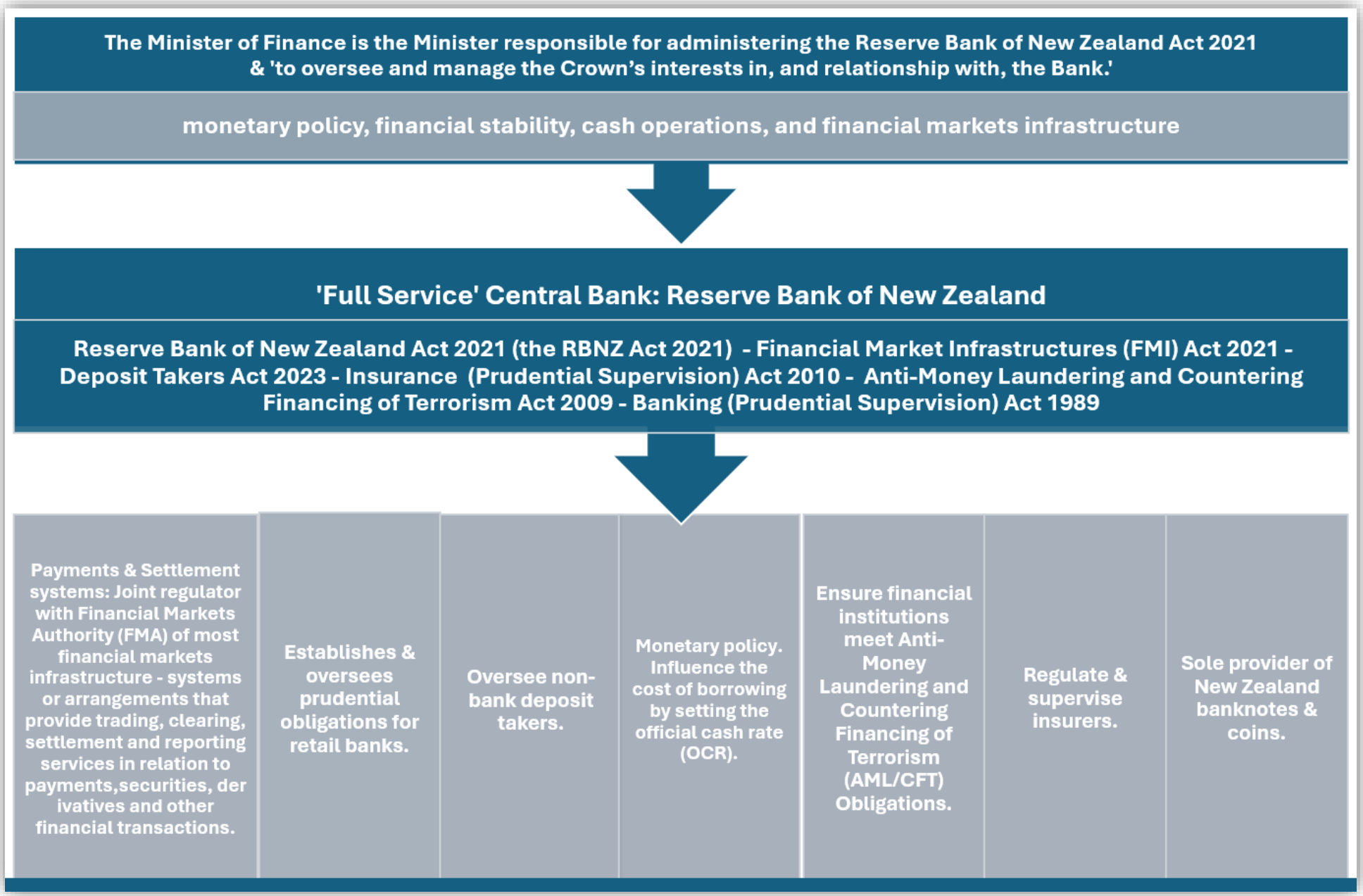



Figure 5 Schematic RBNZ obligations and responsibilities (PSGRNZ).

The RBNZ is not only responsible for monetary policy, the Central bank is financial markets regulator - responsible for oversight of the financial system and prudential regulation of banks, deposit-takers and insurance companies.[99] [100] Recently the RBNZ engaged in large scale asset purchases, which appear to primarily benefit foreign-owned banks. The RBNZ's extensive discretionary powers encompass not only policy application but, rather than being held with the Minister of Finance seem to extend to responsibility for policy-making, even when topics are (or will be) politically contested.

Incentivised by the IMF consultation, the period 2017 through 2024 has involved extensive policy and law making which has resulted in surprisingly little coverage in the legacy media. During the same time period, the RBNZ crosstalk discussing central bank digital currencies (CBDCs) between central banks, the IMF and the Bank for International Settlements surged. In 2020 RBNZ was thoroughly ensconced in research and policy development concerning the topic of CBDCs.[101]

The presentation of the Annual Review of the Reserve Bank in February 2024[102] shed some light on the extent of change. The new governance framework that included the creation of a comprehensive delegations framework; with this resulting in the establishment of a number of committees of the board and engagements with key areas of the banks operations.

A statement of intent was also developed, overseen by the board and a new foreign reserves management coordination framework was established. As Christian Hawkesby noted:

> *'They will ensure that in extreme circumstances we have the ability to intervene to support our policy objectives.'*

Hawkesby later noted:

> *'The Board reviews the performance of the [Monetary Policy Committee] MPC and its' members. Its review includes our quarterly monthly statements, summary of records of the MPC meetings for each [Official Cash Rate] OCR decision. The Board annually records the view that the MPC and its members have adequately discharged their responsibilities in the circumstances that were required for the setting of monetary policy.*
>
> *Much remains to be done as we continue our process of transformation and modernisation. Key focus areas include the Deposit Takers Act and establishing the Depositor Compensation Scheme, setting a new robust prudential standards regime for deposit taking institutions. The new Deposit Takers Act will transform our approach to the regulation of banks and other deposit takers, and there are many years work to do for us to fully implement that new programme and also a great deal to do in investment in the Banks infrastructure to be able to give effect to it.*
>
> *We're still in a period of deliberate investment in our people and our systems as we build the capability needed to support all of that work and the priorities that we have for intensification of supervision and all of the measures that are required under the Reserve Bank Act 2021.*

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[99] Reserve Bank of New Zealand Act 2021. https://www.legislation.govt.nz/act/public/2021/0031/latest/whole.html#LMS287018

[100] Deposit Takers Act 2023. https://www.legislation.govt.nz/act/public/2023/0035/latest/whole.html?

[101] Wadsworth, A. October 19, 2020.Working together to be 'on the money'. A speech delivered to The Royal Numismatic Society of New Zealand, Annual Conference, Wellington, 19 October 2020 By Christian Hawkesby, Assistant Governor General Manager, Economics, Financial Markets and Banking Group. Written with Amber Wadsworth

[102] Finance and Expenditure Committee. 2022/23 Annual review of the Reserve Bank of New Zealand, February 11, 2024. 2024/02/12 https://vimeo.com/showcase/10758103/video/912104765

Reserve Bank Governor Adrian Orr added:

> *'I do want to call out a couple of pieces that I am particularly proud of. One is a multi-year project that we have finished that has the exciting title of Outsourcing. Our systemically important banks are now operationally independent from their parents, should their parent be in trouble or unable to operate. These are primarily the four large Australian banks. That is a significant, probably unique milestone for Aotearoa New Zealand to be there on that one.*
>
> *As the Chair mentioned, significant progress on the Deposit Takers Act and the Depositor Compensation Scheme has been done, but a lot to go ahead. That in large part has been driving the investment profile, the capacity needs, within the Bank as we've shifted into this more intensive, more effective supervisory role of where we are at. We have gone through multi-year investment programmes around physical security, data security. We talked about the cyber security networks there. Resilience, particularly a lot of work around the Future of Cash, access to cash, and a future central bank digital currency space. But we do have ongoing – these are multi-year investment tasks. As we've been progressing, they really have been the triggers to the additional funding to our five year funding agreement that the Minister of Finance gave to us.*
>
> *We are laser-like focussed on being the most cost-effective, fit-for-purpose central bank we can be. We are a full service bank. In Australia we would be the [Reserve Bank of Australia] RBA and [Australian Prudential Regulation Authority] APRA plus a little of [Australian Securities & Investments Commission] ASIC put together, just to give you the scale and scope of what we do at Te Pūtea Matua [RBNZ]. We are uber connected globally and domestically. Our Council of Financial Regulators is a very meaningful group now with very deliberate work-together strategies, including the co-operation and co-ordination around our regulatory behaviours. Trans-Tasman Banking Council, we've talked about the sharing of information. We work very closely together now, and globally the [Bank for International Settlements] BIS, the [International Monetary Fund[ IMF, the South Pacific Group of Governors has been an important network for us, and the executive members of the East Asia Pacific Group. So, we learn a lot, we teach a lot, and we try and move together across that.'*

Later, Orr outlined how inflation targeting works:

> *'We are strong believers that flexible inflation targeting, i.e. forward-looking inflation targeting remains global best standard, and that's what we do. We cannot commit to a time or a date of when exactly inflation would equal 2% because that is economically impossible. What we can do is provide a credible time period over which we will meet our inflation target from whatever starting point we are in and subject to no other additional future shocks. This is why it's a repeat game. Every quarter we turn up and say since we last said the interest rates should be X to achieve inflation at 2 we now think it has to be Y or Z because other shocks... so we're continuously doing that.'*[103]

The Phase 1 reform was generally viewed as positive, however the expertise of the new monetary policy committee (MPC) has been since called into question with former RBNZ official Michael Reddell describing the board as 'tame' and 'underqualified'.[104]

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[103] Finance and Expenditure Committee. 2022/23 Annual review of the Reserve Bank of New Zealand, February 11, 2024. 2024/02/12 https://vimeo.com/showcase/10758103/video/912104765

[104] Reddel, M. January 18, 2024. Avoiding scrutiny. https://croakingcassandra.com/2024/01/18/avoiding-scrutiny/

The RBNZ over this period of expansion has followed other banks in engaging in large scale asset purchases (LSAP), quantitative easing. Paying for those purchases injected money (as liquidity) into the accounts held at the Reserve Bank by the seller's banks. Over the period 2019-2023 RBNZ assets quadrupled, primarily due to quantitative easing via large scale asset purchases (LSAP)[105] during COVID-19. Central banks buy government bonds from banks in the secondary market from private owners (banks and non-banks) in exchange for electronically created 'money'. The banks in the New Zealand case, mostly foreign-owned and highly profitable) then receive the electronically created money on their balance sheet. [106] [107] It is unclear whether this liquidity supported productive development in New Zealand.

During the COVID-19 years 2020-2023, the RBNZ joined other global Central banks in adopting this policy for the first time.[108] Central banks claim it is one of a range of monetary policy tools use, to keep to target inflation and lower interest rates. In May 2020 the Monetary Policy Committee agreed to expand the LSAP to $60 billion, up from the $33 billion limit. Three months later the Committee agreed to expand the programme to $100 billion.

Economic analyst and former RBNZ official Michael Reddell describes LSAP as a 'big asset swap' stating that

> *'The LSAP changed the private sector's lending to the government from bond holdings to settlement cash balances at the Reserve Bank.'*[109]

The RBNZ's LSAP losses to the end of April total $11.5 billion ($6.3 billion realised, and $5.2billion as yet unrealised).

### THE RBNZ AND ACCENTURE: THE EXCLUSIVE NEW ZEALAND EXPERTS ON CBDCS

With regards to the RBNZ's current CBDC consultation, the practical effect of the absence of analysis by independent public interest experts outside the RBNZ is that there is no impartial or independent information that might provide a counterbalance to the RBNZ's claims. The April 2024 consultation literature, and the phrasing of questions have been designed by the RBNZ and most likely Accenture, institutions who stand to significantly benefit from an even greater expansion of powers.

RBNZ and Accenture presume from the way the campaign Stage 2 documents are presented, there is no capacity for the public to say 'no' to central bank digital currency; and they also presume that CBDCs will not represent any threat to existing bank digital currency (fiat currency).

New Zealand's Central bank, working with Accenture have appeared to predetermine that CBDCs will happen, and it seems as if members of Parliament are being entirely bypassed, and that the Minister of Finance is simply a witness.

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[105] RBNZ 2023 Annual Report. Page. 162. https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/annual-reports/annual-report-2023.pdf

[106] RBNZ (2022) About large scale asset purchases (LSAP). https://www.rbnz.govt.nz/financial-markets/domestic-markets/operational-information/large-scale-asset-purchase-programme-process

[107] E,g, ANZ New Zealand Limited. https://www.anz.com/content/dam/anzcom/shareholder/2023-five-year-summary.pdf

[108] BIS (March 17, 2023) Central bank asset purchases in response to the Covid-19 crisis https://www.bis.org/publ/cgfs68.htm

[109] Reddell M (April 15, 2023) Understanding LSAP losses. Croaking Cassandra. https://croakingcassandra.com/2023/04/15/understanding-lsap-losses/

Members of Parliament have an obligation to understand the curly issues that arise in relation to CBDCs outside of the remit of RBNZ and Accenture.

- How political and financial conflicts of interest may arise in relation to the Central banks role in promoting financial stability;
- the problem where financial stability policies come at high cost to small businesses and people who are vulnerable and of low socio-economic status;
- the potential for abuse of power where dual-use technology programmability functions might not only be applied to consensual retail transactions but non-compliant citizens (to incentivise appropriate behaviours);
- the problem of delegation of powers of digital money creation to the regulatory agency;
- jurisdictional challenges presented by interconnected ledgers with global Central banks;
- the dilemma of policy defaulting to harmonise with global institutions outside of parliamentary scrutiny; and
- the general impossibility of transparency, and the principal-agent problem that lies at the heart of many of these problems.

To put it simply, PSGRNZ urge that members of Parliament do not conflate CBDCs as a benign generic bank digital currency, but it's very difficult when the RBNZ and Accenture, both organisations with complex global relationships and many competing conflicts of interest, set the scope and nature of discussion and refer to CBDCs as 'digital cash'.

## 3. GLOBAL CENTRAL BANK KNOWLEDGE (AND POWER)

When the World Bank, IMF and BIS are involved, the balance of power does shift away from local jurisdictions. These institutions are subject to an extraordinary range of immunities and legal privileges. The extent to which they are immune to not only taxation obligations, but domestic legal process is unclear.

Real risks arise when an institution is legally protected, and/or too-big-to-fail. When public institutions claim to operate in the 'free market' and lower costs and increase competition, this is contingent upon political pressure. Risks that should be considered include the following:

- Lawmaking can be delegated to these big institutions through international harmonisation protocols and outside parliamentary scrutiny.
- There is risk that Central banks will not only compete in retail markets, but displace smaller low cost free-market providers. Agreements with international retail banks will be unlikely to be disclosed.
- Over time, there is a risk that Central banks might act in an uncompetitive manner, and increase transaction costs.
- If smaller low-cost providers have been squeezed out, the public will be forced to accept Central bank prices.

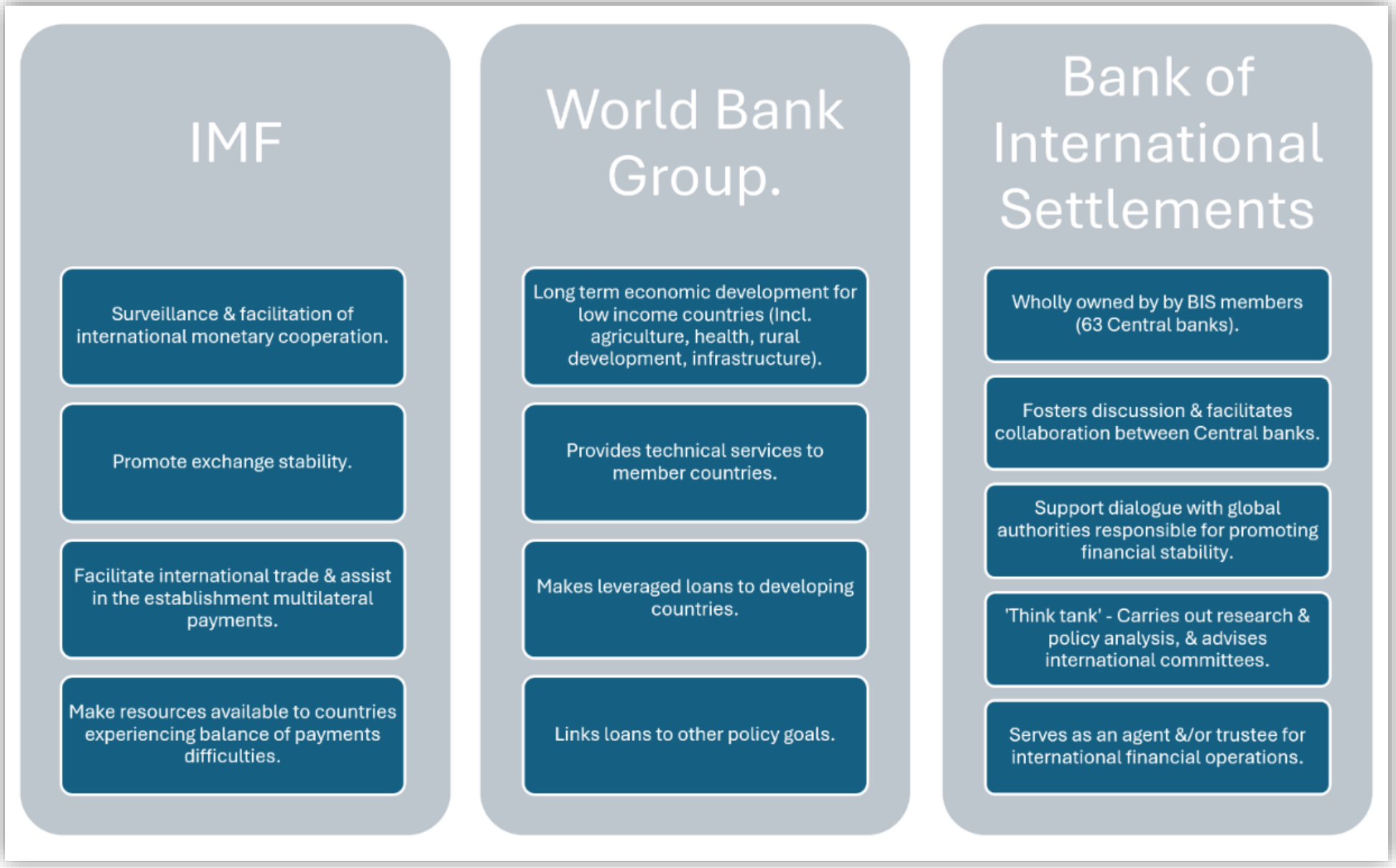



**Figure 6 Schematic - IMF, World Bank, BIS roles and responsibilities (PSGRNZ).**

Central banks are conducting trials, from smart contract trials to cross-border retail CBDC transactions. Central banks claim that retail CBDC cross-border transactions will reduce settlement and counterparty risk and increase competition and choice for consumers.

The Bank for International Settlements (BIS)[110] [111] [112] and the International Monetary Fund (IMF)[113] [114] have extensively worked with the global Central banks, developing CBDC functionality and CBDC-related policies and principles to support domestic Central bank CBDC campaigns. In 2023 the BIS released the Project Icebreaker paper[115]. The BIS and three partnering Central banks, the Bank of Israel, Norges Bank, Sveriges Riksbank confirmed that cross-border transactions using retail CBDCs could be undertaken and that this process reduced costs, reduced settlement and counterparty risk, allowed increased competition and choice for consumers and was fast and scalable.

The policy, rules and principles relating to CBDCs are not the result of demands of citizens – i.e. members of Parliament responding to the demands of the electorate. Rather, Digital ID and CBDC policies have been exclusively drafted by global groups of Central bank insiders from at minimum, 2015 onwards.

There is little introspection on the risks that occur when institutions that present themselves as impartial and apolitical, who, 'cannot fail' engage in retail activity which includes oversight of public transaction. The risk that over time Central banks may be tempted to act in an anti-competitive manner, or that governments may be tempted to exert greater control and abuse their power, are not considered when the risks and benefits of trials are summarised[116] [117].

The ease with which supporting institutions are set up to represent legitimating infrastructure is almost comical. For example, a 'Digital Currency Monetary Authority' was established.

- It introduced a 'global compliant framework'.
- It released its own 'International Central Bank Digital Currency.'
- The Chief Executive, Darrell Hubbard was drawn from a small, relatively unsuccessful Fintech company, Vertron which had developed an unsuccessful funding portal for investors and start-ups.
- Yetta, a European funded 'untraceable electronic cash system' was heavily promoted in 2017-2018.

[110] Bank for International Settlements. (2018) V. Cryptocurrencies: looking beyond the hype. https://www.bis.org/publ/arpdf/ar2018e5.pdf
[111] Carstens A. and Nilekani N. (2024) Finternet: the financial system for the future. Bank for International Settlements. https://www.bis.org/publ/work1178.htm
[112] Bank for International Settlements (2019) G7 Working Group on Stablecoins - Investigating the impact of global stablecoins Annex C: Central bank digital currencies (CBDCs). https://www.bis.org/cpmi/publ/d187.pdf
[113] IMF's Central Bank Digital Currency (CBDC) Virtual Handbook. https://www.imf.org/en/Topics/fintech/central-bank-digital-currency/virtual-handbook
[114] IMF Publications – search: CBDC. https://www.imf.org/en/Publications/Search#q=cbdc&sort=relevancy
[115] BIS (2023) Project Icebreaker: breaking new paths in cross-border retail CBDC payments. Bank of Irael, Norges Bank, Sveriges Riksbank. https://www.bis.org/publ/othp61.pdf
[116] Bank for International Settlements (2023). Project Rosalind. Building API prototypes for retail CBDC ecosystem innovation. https://www.bis.org/publ/othp69.pdf
[117] BIS (2023) Project Icebreaker: breaking new paths in cross-border retail CBDC payments. Bank of Irael, Norges Bank, Sveriges Riksbank. https://www.bis.org/publ/othp61.pdf

These developments have occurred relatively swiftly, seemingly without public consultation, and appear decoupled from any representative forum.

With context from the above paragraphs, one can appreciate the extraordinary degree of self-restraint that will be in order, in light of the conflicts of interest the three self-imposed 'principles'[118], designed by the Bank for International Settlements and Central banks:

1. *CBDCs should do no harm i.e. they should not hinder a central bank's ability to meet its monetary and financial stability objectives.*
2. *CBDCs should co-exist with cash and robust privately-issued money such as deposits in bank accounts; and*
3. *CBDCs should be innovative and efficient.*

At an IMF and World Bank event (October 19, 2020), Bank for International Settlements General Manager Agustín Carstens stated[119]:

> *'A key difference with CBDC is the Central Bank will have absolute control:*
>
> *In cash we don't know who is using a $100 bill today. We don't know who is using a 1000 peso bill today. A key difference with CBDC is the Central Bank will have absolute control on the rules and regulations that will determine the use of that and also we will have the technology to enforce that.'*

Carstens personal dedication to developing the policy language and digital infrastructure which will enable CBDCs to operate globally demonstrates the extent of BIS commitment to global oversight.[120]

> *'Our starting point was the observation that recent years have seen a flowering of innovation in financial technology that has led to some important breakthroughs. Programmable ledgers are one example. These digital platforms combine the recordkeeping functions of traditional databases used to track the ownership of financial assets with the rules and governance arrangements needed to update the databases. These ledgers enable smart contracts, self-executing applications that can trigger an action, for example, the sale of an asset if a prespecified condition is met; and composability, the ability to bundle many of these automated transactions together.*
>
> *Tokenization is another example. Tokens are the digital assets that exist on programmable ledgers. They contain the information necessary to uniquely identify the assets and their owns and the rules and logic governing their use. More advances could soon arrive.*
>
> *I am particularly encouraged by the transformative potential of artificial intelligence for the financial sector. …'*

Carsten's April 2024 Finternet paper outlines how extraordinarily powerful smart contracts will be:[121]

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[118] Bank for International Settlements (2020) Central bank digital currencies: foundational principles and core features. Report no 1 in a series of collaborations from a group of central banks. https://www.bis.org/publ/othp33.pdf

[119] International Monetary Fund, World Bank Group. October 19, 2020. Cross-Border Payment—A Vision for the Future. Agustín Carstens. 22:50- https://www.youtube.com/watch?v=mVmKN4DSu3g

[120] Peterson Institute for International Economics (PIIE). (2024, 20, April) A vision of the future financial system. Agustín Carstens 4:24- https://www.youtube.com/watch?v=Y3JoGMcFyjk&t=

[121] Carstens A. and Nilekani N. (2024) Finternet: the financial system for the future. Bank for International Settlements. https://www.bis.org/publ/work1178.htm

*'The essence of programmability within the Finternet is encapsulated in its sophisticated implementation of smart contracts. These contracts are essentially executable code that automate the execution of contractual agreements, thereby eliminating the need for intermediaries and significantly reducing the potential for disputes. Smart contracts on the Finternet can operate with remarkable flexibility, being deployable both remotely and directly on the ledger, which enables a wide array of transactional and contractual operations to be conducted with efficiency and precision. This capability is critical in ensuring that financial agreements are executed exactly as intended by the contracting parties, without the delays or errors that can occur in manual processes. The Finternet's smart contracts can govern a multitude of financial interactions, from simple transfers of value to intricate, conditional financial instruments and services. This level of automation and precision dramatically enhances the speed, efficiency and security of transactions within the ledger system.*

*Further augmenting the power of smart contracts is the Finternet's comprehensive support infrastructure, which includes a rich ecosystem of contract templates, policy frameworks and applets. This infrastructure provides developers and financial engineers with a robust toolbox for creating and deploying customised smart contracts tailored to specific transactional or operational needs. Smart contract templates offer a starting point for contract development, encapsulating common contractual arrangements and best practices. Policy frameworks ensure that contracts comply with relevant regulations and standards, embedding compliance directly into the transactional fabric of the ledger. Applets extend the functionality of smart contracts, enabling them to interact with external data sources, trigger events based on real-world occurrences or integrate with other digital services and platforms.'*

But not everyone exclusively focuses on benefits. On 28 June 2023, Eswar Prasad Former Chief China Division, IMF, and Senior Professor of Trade Policy at Cornell University stated:

*'If you think about the benefits of digital money there are huge potential gains. It's not just about digital forms of physical currency you can have programmability. Units of central bank currency with expiry dates. You could have, as I argue in my book, a potentially better, or some people might see it as a darker world where the government decides that units of central bank money can be used to purchase some things but not other things that it deems less desirable. Like say ammunition or drugs or pornography or something of the sort.*

*And that is very powerful in terms of the CBDC, and also, I think, extremely dangerous for central banks. Because ultimately, if you have different units of central bank money with different characteristics or if you use central bank money as a conduit for economic policies in a very targeted way, or more broadly for social policies, that could really affect the integrity of central bank money and the integrity and independence of central banks. So there are wonderful notions of things that can be done with digital money, but again I feel the technology could take us to a better place, but equally it has potential to take us to a pretty dark place."*[122]

*The Bank for International Settlements (BIS) has not only driven policy on CBDCs, but envisages CBDCs as combining with a broad sweep of real and financial assets that would be tokenised – 'everything in one place.' Multiple ledgers (relating to different jurisdictions) might each cater to*

[122] June, 28, 2023. Senior Professor of Trade Policy at Cornell University, Eswar Prasad speaks about Central Bank Digital Currencies (CBDC) at the World Economic Forum Annual Meeting of the New Champions 2023 in Tianjin. https://rumble.com/v2z06eu-prof.-prasad-warns-of-cbdc-risks-at-wef-expiry-dates-control-over-less-desi.html

*specific use cases, and these would coexist and reside on a unified ledger which would allow sequences of financial transactions to be automated and seamlessly integrated.'*

Indeed, with 'everything in one place':

*'[A] unified ledger provides a setting in which a broader array of contingent actions can be automatically executed to overcome information and incentive problems. In this way, tokenisation could expand the universe of possible contracting outcomes. The unified ledger thus opens the way for entirely new types of economic arrangement that are impossible today due to incentive and informational frictions.'*[123]

The BIS envisages smart contracts as increasing the 'scope for successful coordination' that will 'serve the public interest by overcoming obstacles associated with information and incentive problems'. This can be understood as contingent performance (based on the conditional performance of actions) which incentivises a desired behaviour or outcome.

*'In many instances, mutually beneficial outcomes cannot be achieved when participants need to undertake costly joint efforts. The reason is that individual participants may have an incentive to free ride on the contribution of others. Contingent performance promises to overcome such coordination problems.'*[124]

Programmability is incorporated into technical specifications. The German Federal Office for Information Security paper on *Requirements on backend systems*[125] acknowledge that use of cash involves near-total autonomy while

*'one of the biggest differences between cash and most existing electronic payment solutions, which in principle provide full visibility of all payments.'*

Central banks are public institutions –by virtue of their sovereign status they are already 'too big to fail'. They are systemically important financial institutions (SIFIs).

The German Guidelines for CBDC backend systems reveal many challenges and uncertainties inherent in management of CBDCs. These include double counting, the potential for authentication and validity checks to fail, the question of discarding small quantities of CBDCs, the uncertainty of offline scenarios, the risks if scalability does not stand up to stress or congestion, the issue of and the difficulty of predicting when the security guarantee of algorithms will expire, and the very real risk of attacks by outside agents. The Guidelines refer to attack/s no less than 139 times.

Different types of wallets can contain different functionality:

*'Depending on the amount of personal information they require, wallets may only allow making payments subject to certain restrictions (e. g., amount of money stored, number of payments per day, amount of money per transaction or per day) or without any such restrictions (apart from general restrictions should the central bank see fit to impose them). This approach can give rise to*

[123] Bank for International Settlements (2023). III. Blueprint for the future monetary system: improving the old, enabling the new. P.86-87 https://www.bis.org/publ/arpdf/ar2023e3.pdf
[124] Bank for International Settlements (2023). III. Blueprint for the future monetary system. P.100-102, p.109.
[125] Federal Office for Information Security. Technical Guideline BSI TR-03179-1: Central Bank Digital Currency. Part 1: Requirements on backend systems. https://www.bsi.bund.de/SharedDocs/Downloads/EN/BSI/Publications/TechGuidelines/TR03179/TR03179-1.pdf?

*(at least) two types of wallets: Fully anonymous wallets requiring no personal information and facing restrictions and personalised wallets that are completely traceable but do not face restrictions.'*

It is anticipated that CBDC infrastructure will contain:

*'further functionality and offer further services built on top of the core system as an additional application layer. For instance, this may include the support for automatically triggering payments when predefined conditions are met (often called programmability) or prohibiting payments when a wallet that has been issued for specific purposes only is used outside its permitted scope, as well as custody services offered to end users.'*

The Guidelines advise that a 'revocation authority' can revoke notes from the backend systems which support the operability of the CBDC system – while:

*'On the front end side, upon request of the central bank, specific wallets may be blocked from participating in the CBDC ecosystem and the CBDC notes residing in them may be frozen. Nevertheless, if such functionality existed and were used, the CBDC notes residing in blocked wallets would not become revoked or invalid this way, and their owner would not change.'*

Engineers and designers are faced with a myriad of contradictions which cast doubt on the promises of privacy. For example, Germany's *Requirements on backend systems*[126] document provides some idea of the extent of opportunities for privacy to break down in different ways, whether the CBDCs are token-based or account-based.

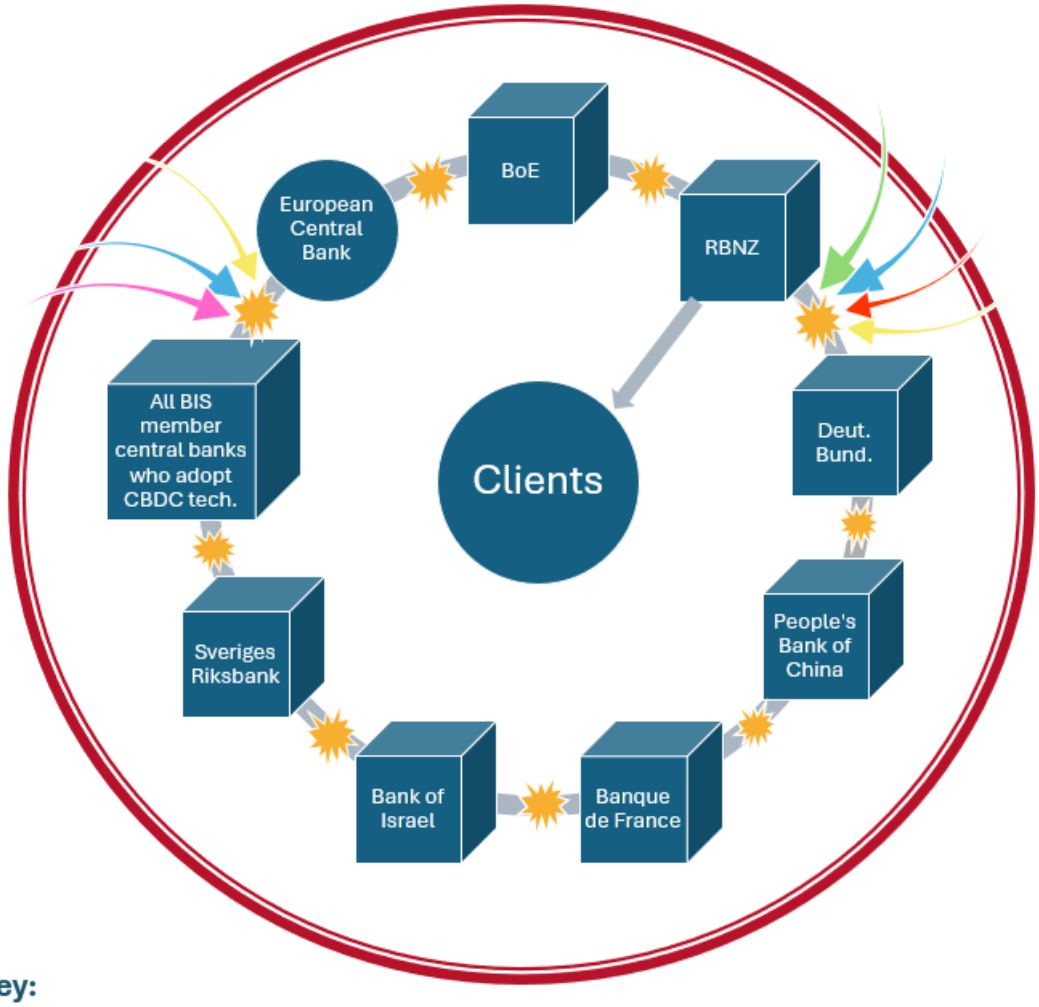
*'With a token-based approach, each individual token that can be stored or transferred and is as such similar to a classical bank note. With an account-based approach, the wallet simply stores the total balance of a user's account.*

*Implementations that take the account-based approach, however, must take care to preserve a strict separation between the possibly personalised wallet and the account stored on it so as not to leak personal information in the transactions. While this separation is important to maintain privacy, it poses problems to security: In order to authenticate payments and to avoid double spending, all transactions and the involved CBDC notes will need to pass some background validity check (see 3.2.2 'Validity check for CBDC notes'). In the token-based approach, this validity check can be performed on the individual CBDC notes themselves. In the account-based approach, however, all received CBDC notes are merged into the total balance, so that, without further arrangements, the original CBDC notes can no longer be traced nor preserve a proof of their validity.*

*Instead, in this approach, trust in a transaction's validity is often replaced by trust in the correct authentication of the wallet owner. This, however, is in conflict with the privacy considerations above, which implementations must resolve. In any case, implementations must ensure that merging a CBDC note into the total balance does not discard any information that is necessary to perform the validity check, even if the check has to be postponed until an online connection can be established. '*[127]

[126] Federal Office for Information Security. Technical Guideline BSI TR-03179-1: Central Bank Digital Currency. Part 1: Requirements on backend systems. Page 13. https://www.bsi.bund.de/SharedDocs/Downloads/EN/BSI/Publications/TechGuidelines/TR03179/TR03179-1.pdf?

[127] Federal Office for Information Security. Technical Guideline BSI TR-03179-1: Central Bank Digital Currency.




**Key:**

Bank of international Settlements:

Unified ledger:

Application Programming Interface (API):

Smart Contracts:

**Unified ledger (UL):** a digital platform that brings together multiple financial assets as executable objects on a common programmable platform.

**Application programming interface (API):** a set of rules and specifications followed by software programs to communicate with each other, and an interface between different software programs that facilitates their interaction.

**Smart contracts:** self-executing applications of programmable platforms that can trigger an action if some pre-specified conditions are met.

**Figure 7 Graphical representation. Bank for International Settlements corralling influence on Central banks, as central banks harmonise to reflect global corporate governance priorities. Smart contracts, directed and/or developed by external providers will be deployed by a range of government & non-government providers. (PSGRNZ)**

Uses will be surveilled and controlled through validity checks and programming functions. These are built into the technology. Claims that the surveillance will be limited to, for example, authorised retail transaction with full approval of an individual, cannot ever be ascertained – these processes will be black-boxed inside the infrastructure of these systems.

## 4. KEY ADVISER: THE INTERNATIONAL MONETARY FUND

IMF advice was integral to the RBNZ's largest transformation in decades, and the IMF has taken a strong global leadership role in supporting CBDC trials.[128] IMF Managing Director Kristalina Georgieva stated in 2022:[129]

> *IMF is deeply involved in this issue, including through providing technical assistance to many members'*

The RBNZ's recent reforms were initiated following International Monetary Fund (IMF) Article IV advice[130] in 2017 (The IMF advises on interest rate changes and is a lender of last report).

An extensive 2016 review by the IMF was followed by the publication of the Financial Sector Assessment Program: Financial System Stability Assessment in 2017 which included two Detailed Assessment Reports (DARs), and five Technical Notes.[131]

Two missions took place, in August and November 2016. During August there were over 130 meetings across the banking, insurance, crisis management and financial market infrastructure (FMI) assessments. This included meetings with private sector stakeholders: regulated entities, audit firms and industry groups. In November the IMF assessed the market conduct role of the Financial Markets Authority (FMA) and assessed RBNZ's macroprudential framework. Meetings were also held which discussed the topic of Anti-Money Laundering and Countering Financing of Terrorism (AML/CFT) regime and money remittances. The IMF consequently made over a hundred recommendations.[132]

In the *2016-17 Financial Sector Assessment Programme (FSAP) report,* the International Monetary Fund (IMF) recommended that New Zealand formally adopt the international standards for FMI regulation, the Principles for Financial Market Infrastructures (PFMIs), into law.

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[128] IMF (2022) Behind the Scenes of Central Bank Digital Currency: Emerging Trends, Insights, and Policy Lessons. https://www.imf.org/en/Publications/fintech-notes/Issues/2022/02/07/Behind-the-Scenes-of-Central-Bank-Digital-Currency-512174

[129] Georgieva K. (February 9, 2022). The Future of Money: Gearing up for Central Bank Digital Currency. *IMF* https://www.imf.org/en/News/Articles/2022/02/09/sp020922-the-future-of-money-gearing-up-for-central-bank-digital-currency

[130] New Zealand: Financial Sector Assessment Program: Financial System Stability Assessment. Country Report No. 2017/110. ISBN/ISSN:9781475598834/1934-7685. https://www.imf.org/en/Publications/CR/Issues/2017/05/08/New-Zealand-Financial-Sector-Assessment-Program-Financial-System-Stability-Assessment-44886

[131] New Zealand: Financial Sector Assessment Program: Financial System Stability Assessment. https://www.imf.org/en/Publications/CR/Issues/2017/05/08/New-Zealand-Financial-Sector-Assessment-Program-Financial-System-Stability-Assessment-44886

[132] Hunt, Chris. Bulletin Vol. 80, No. 6 July 2017. https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/bulletins/2017/2017jul80-06.pdf

In 1944 the IMF was established. Following the shift to fiat currency, IMF loan-making increased, and the use of conditionality agreements and austerity policies by the IMF expanded. The IMF intensively counsels, indeed, directs the RBNZ on policy. [133]

The IMF shouldn't be viewed as an impartial actor. The IMF and the Bank for International Settlements, together, has a long-standing interest in implementing CBDCs.[134]

The IMF depends on surcharge income for funding a large part of the IMF's operating costs.

Countries turn to the IMF, as a lender of last resort when faced with an economic crisis. The surcharges for lending create political and financial conflicts of interest. However, as Stiglitz and Gallagher (2022) [135] summarise:

> *'In exchange for IMF lending, governments surrender some sovereignty, self-determination of their economic policies, and implicitly admit that the government, on its own, could not manage the travails through which it is going. A lesser-known but also costly trade-off is that the IMF imposes significant surcharges – akin to the penalty rates imposed by banks – on countries with large borrowings from the IMF that are not paid back within a relatively short time. Indeed, IMF surcharges are pro-cyclical financial penalties imposed on countries precisely at a time when they can least afford them.'*

Surcharges are a hard currency, they involve the transfer of resources from the people of a country to the IMF, and as Stiglitz and Gallagher state, they are regressive transfers, and the consequences of the transfer of these surcharges because they affect:

> *'Not just the level of poverty, health, education and overall well-being in the country in crisis, but also its potential growth.'*

The IMF should not be viewed as an impartial actor when advising nation states as economic crises may result in the IMF financially benefiting:

> *'Strikingly, these charges are effectively funding a large part of the IMF's operating costs and the build-up of precautionary balances, supplementing the institution's firepower. Of course, since funds are fungible, the money could be thought of as simply supporting the Fund's balance sheet and cash flow.'*

Austerity politics in New Zealand has left academic institutions with limited capacity and latitude to research and critically assess New Zealand's financial sector.

This unfortunately means that changes advocated by the International Monetary Fund (IMF) – whether in the public (civil society) interest or perhaps contrary to the long-term public interest, are unlikely to be meaningfully and contextually addressed in expert and/or public debate, in terms of the public good and the long-term economic welfare and financial security of assets, infrastructure and public health.

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[133] New Zealand: Financial Sector Assessment Program: Financial System Stability Assessment. Country Report No. 2017/110. ISBN/ISSN:9781475598834/1934-7685. https://www.imf.org/en/Publications/CR/Issues/2017/05/08/New-Zealand-Financial-Sector-Assessment-Program-Financial-System-Stability-Assessment-44886

[134] IMF (2024). Search: CBDC. https://www.imf.org/en/Search#q=cbdc&sort=relevancy

[135] Stiglitz, JE and Gallagher KP. (2022). Understanding the consequences of IMF surcharges: the need for reform. Review of Keynesian Economics, Vol. 10 No. 3, Autumn 2022, pp. 348–354. DOI: 10.4337/roke.2022.03.03

Cyprus serves as a case study in IMF and Central bank intervention following events 2011-2013. A real-estate and credit boom largely driven by offshore investment led an asset bubble collapse. A power plant had been destroyed, leading to rolling blackouts. In March 2013 'Cyprus reached a political agreement with its international partners on the key elements of a macroeconomic adjustment programme' which included the 'restructuring and substantial downsizing of the banking sector, the reinforcement of efforts on fiscal consolidation, and initiation of structural reforms'. A 10-day bank holiday (freeze) was imposed. The Central bank imposed temporary capital controls and deposit withdrawal restrictions, including a ban on transfers abroad. A compulsory bank-levy on all retail deposits provided sufficient liquidity to recapitalise the banks. In April the IMF and Republic of Cyprus then agreed to a 3-year macroeconomic adjustment programme.[136] Fiscal reforms included an expansive privatisation plan which was estimated to raise EUR 1 billion.:

> *'This plan should consider the privatisation prospects of state-owned enterprises (SOEs) and semi-governmental organisations (SGOs), including, inter alia, CyTA (telecom), EAC (electricity), CPA (ports), as well as real estate/land assets. For the privatisation of natural monopolies, an appropriate regulatory framework is a prerequisite. The provision of basic public goods and services by privatised industries will be fully safeguarded, in line with the national policy goals and in compliance with the EU Treaty and appropriate secondary legislation rules.'*[137]

## 5. DIVING INTO THE PROGRAMMABILITY FUNCTIONS

The Central bank's bank, the Bank for International Settlements (BIS), leads discussion and policy development. The BIS leads global discussion on programmable digital currencies, with frequent releases to support CBDC implementation.

While this may be suitable for retail bank trades, the problem of where central bank assets and BIS oversight and powers start and stop remain largely unknown and blackboxed, rather like the blackbox on an aircraft. There is ample evidence, from white papers, presentations and other information sources, that the BIS plans to have oversight of policy and guideline (protocol) development and values which drive decisions by central bank members. But there will be an extraordinary array of private sector co-developers that will partner with governments in the development of a technology infrastructure. The effect is a hybrid regime.[138]

The private sector developers of the technology infrastructure, the Fintech industry and management consultancy firms are already, and will continue to be, heavily involved in co-creating the rules relating to the overall architecture, as well as the governance layer, which includes the legal, regulatory and institutional frameworks and the contracts relating to both Digital IDs and CBDCs. This is because the Fintech sector and their partnered management consultancy firms, after investing in research and development for years, and co-creating policies in largely private forums, hold extensive expertise that can inform government decision-makers on these issues.

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[136] International Monetary Fund, 2013a. Cyprus: Request for arrangement under the extended fund facility. P.96

[137] International Monetary Fund, 2013a. Cyprus: Request for arrangement under the extended fund facility. IMF Country Report No. 13/125

[138] For discussion on hybrid regime and democratic regression see Erdmann, G., & Kneuer, M. (2011). "Introduction. In Erdmann, G., & Kneuer, M. (Eds.), Regression of Democracy?, (pp. 9-21). Springer VS.

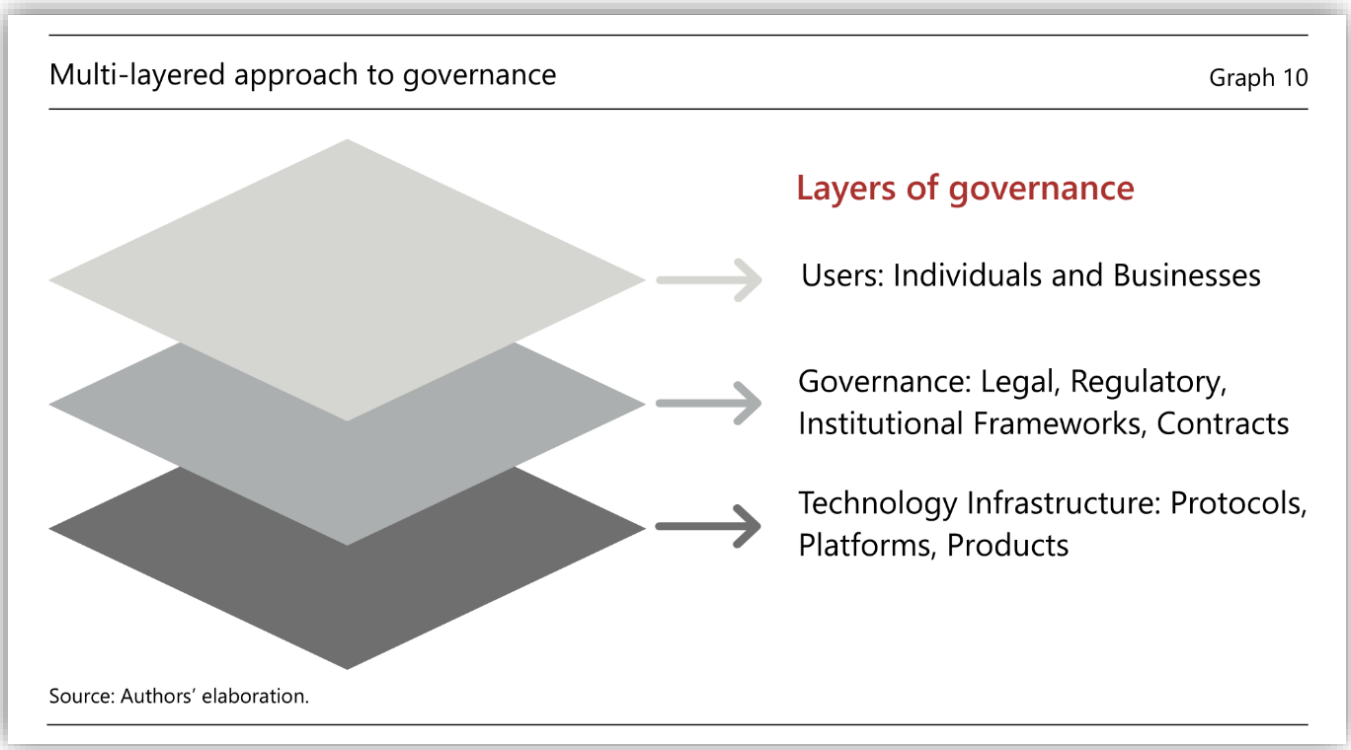



**Figure 8 BIS (2024) Finternet: the financial system for the future. Page 27.**

The BIS and its officers and directors have extraordinary powers of immunity and legal privilege, globally and perhaps domestically.[139] It is unclear how the BIS allocates preferred status for systemically important institutions. It's very unclear how asset ownership and transfer will apply on unified ledgers. This is a large part of the problem. It's also very evident that Fintech and the Central banks envisage tokens to represent far more than simple currency. Tokens can represent asset classes, company shares, corporate or government bonds and real estate. Tokens can also represent real world items, from cars to art. Then there are 'unregulated tokens'[140]:

> '*tokens that operate outside the purview of traditional financial regulators, providing users with new forms of value exchange such as virtual assets in a game.*'

Transfers are made via service (interface) providers who might be banks, financial institutions or government institutions, and application programming interfaces (APIs). APIs sit at the centre of this infrastructure and act rather like a translation device, allowing different software programs to communicate with each other. APIs can either be controlled as a one-tier system entirely controlled by a Central bank or a two-tier system where services are provided by the private sector. APIs connect separate ledgers. The API layer connects public and private infrastructures or intragovernmental infrastructures by passing instructions from the service providers to the Central bank ledger. Separate

[139] E.g. Singapore. International Organisations Immunities and Privileges Act. Chapter 145. https://www.bis.org/about/hub_order.pdf

[140] Carstens A. and Nilekani N. (2024) Finternet: the financial system for the future. Bank for International Settlements. Page 23. https://www.bis.org/publ/work1178.htm

ledgers could be connected (or unified) through APIs, or, as their scope expands over time, they could incorporate additional assets and entities, or merge together. [141]

Unified ledgers represent a new type of financial market infrastructure (FMI).[142]

> *'These are digital platforms that bring together multiple financial asset markets – such as for wholesale tokenised central bank money, tokenised commercial bank deposits and other tokenised assets, including company shares, corporate or government bonds and real estate, to name just a few – as executable objects on common programmable platforms.'*

Communications between ledgers would be assisted by what the BIS describes as a unified interledger protocol – a mechanism designed to secure inter-operability across ledgers – which underpins technical guarantees that transactions are secure and irreversible. [143]

The BIS considers that in addition to digital record keeping and asset transfer, that claims will be tokenised, as a new kind of economic arrangement. The programmability is core:

> *Through programmability and the platform's ability to bundle transactions ("composability"), a unified ledger allows sequences of financial transactions to be automated and seamlessly integrated. This reduces the need for manual interventions and reconciliations that arise from the traditional separation of messaging, clearing and settlement, thereby eliminating delays and uncertainty. The ledger also supports simultaneous and instantaneous settlement, reducing settlement times and credit risks.[144]*

The choice of account or token-based ledger structures may make little difference regarding programmability functions. API functionalities work with either *account* or *token-based* central bank ledgers. Account management functionality includes the capacity to open an account, lock funds or disable (freeze) an account, or draw down (drain) an account, and check account balances.[145]

Unified ledgers bring together multiple financial assets as 'executable objects'[146]

> *In contrast, in a tokenised setting, money or assets become "executable objects" that are maintained on programmable platforms. They could be transferred through the execution of programming instructions issued by system participants without the intervention of an account manager. While tokenisation does not eliminate the role of intermediaries, it changes the nature of that role. The role of the operator in a tokenised environment is as a trusted intermediary serving in a governance role as the rule book's curator, rather than as a bookkeeper who records individual transactions on behalf of account holders.*
>
> *The claims traded on programmable platforms are called tokens. Tokens are not merely digital entries in a database. Rather, they integrate the records of the underlying asset normally found in a traditional database with the rules and logic governing the transfer process for that asset (Graph 1).*

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[141] Bank for International Settlements (2023). III. Blueprint for the future monetary system. https://www.bis.org/publ/arpdf/ar2023e3.pdf
[142] Carstens A. and Nilekani N. (2024) Finternet: the financial system for the future. Page 2.
[143] Carstens A. and Nilekani N. (2024) Finternet: the financial system for the future. Bank for International Settlements. Page 19. https://www.bis.org/publ/work1178.htm
[144] Bank for International Settlements (2023). III. Blueprint for the future monetary system. P.88.
[145] Bank for International Settlements (2023). Project Rosalind. Building API prototypes for retail CBDC ecosystem innovation. https://www.bis.org/publ/othp69.pdf
[146] Carstens A. and Nilekani N. (2024) Finternet: the financial system for the future. Bank for International Settlements. m

*Hence, whereas in traditional systems the rules that govern the updating of asset ownership are usually common to all assets, tokens can be customised to meet specific user or regulatory requirements that apply to individual assets.* [147]

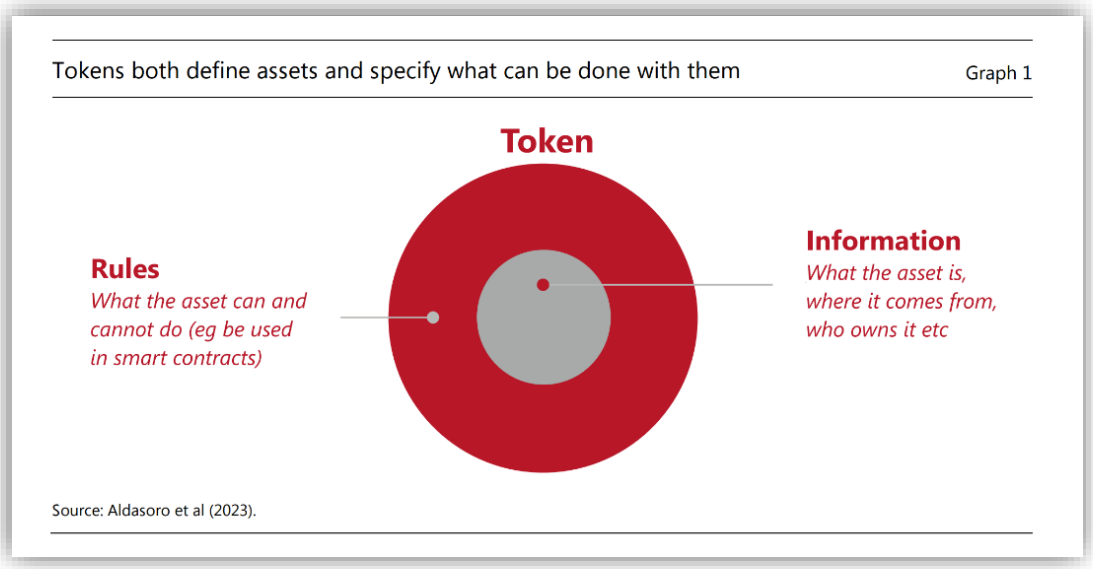



**Figure 9 BIS (2023). III. Blueprint for the future monetary system. p.88**

The Bank for International Settlements highlights two important capabilities[148]:

- Several actions can be bundled into one executable package (referred to as 'composability').
- Smart contracts enable contingent performance of actions.

Programmability, or smart contract functionality is designed into CBDC infrastructure through tokenisation. A token describes the information relating to what the asset is, where it comes from, and who owns it, as well as the rules – that the asset can or cannot do.[149]

*'Tokenisation – the process of recording claims on financial or real assets that exist on a traditional ledger on a programmable platform – introduces two important capabilities. First, by dispensing with messaging and the reliance on account managers to update records, it provides greater scope for composability, whereby several actions are bundled into one executable package. Second, it enables the contingent performance of actions through smart contracts, ie logical statements such as "if, then, or else". By combining composability and contingency, tokenisation makes the conditional performance of actions more readily attainable, even quite complex ones.'*

England's central bank, the Bank of England have been considering the benefits of smart contracts for several years. The Bank of England currently states that they will not toggle smart contracts to CBDCs.[150] However, there is no transparency, regarding Bank of England discussions and regarding the

[147] Bank for International Settlements (2023). III. Blueprint for the future monetary system. P.87 https://www.bis.org/publ/arpdf/ar2023e3.pdf
[148] Bank for International Settlements (2023). III. Blueprint for the future monetary system. P.89
[149] Bank for International Settlements (2023). III. Blueprint for the future monetary system: improving the old. P.88
[150] Bank of England (2023) The digital pound: Technology Working Paper https://www.bankofengland.co.uk/-/media/boe/files/paper/2023/the-digital-pound-technology-working-paper.pdf

technologies under development that might assure the public. The Bank of England worked with the BIS Innovation Hub (Project Rosalind)[151] to develop a prototype which connected central bank ledgers with private service providers to experiment with application programming interfaces (APIs) functionality (APIs facilitate network communication) to enable retail CBDC payments and support innovation. Innovation encompasses private sector programmability, – but also carries a dual use potential. Project Rosalind confirmed that three-party locks can be programmed whereby a trusted third party could specify functionality. [152]

The Central Bank of Brazil released their Digital Real code for public audit. A developer identified the:

> *'existence of a series of functions present within the smart contract of this test version. These functions allow controllers to make various changes to the information of the operators of the Real Digital system.'*

In addition to operations such as the "minting" of Digital Real tokens and enabling/disabling target accounts, explained in the documentation, a developer found other functions by applying reverse engineering techniques to the material made available by the Central Bank.'[153]

However, at the time the new RBNZ legislation was coming into force, Central banks globally, together with the IMF and the Bank for International Settlements (BIS) were engaged in deep discussions relating to the policy, platform and structure of CBDCs. With this understanding in place it is important to understand that policy, rules and principles relating to CBDCs are not the result of demands of citizens. Rather, they have exclusively been drafted by global groups of Central bank insiders from approximately 2015 onwards.[154]

The Bank for International Settlements (BIS, the Central bank's bank) imagines a unified ledger concept whereby there is a two-tier system, with settlement provided in wholesale CBDCs, and where the 'private sector could continue to innovate to the benefit of households and firms.'[155]

A 2023 Bank of England paper highlighted how[156]:

> *'Technology is emerging that allows users to set rules to limit their spending on certain products, for example on gambling, or to automatically save a small amount of money after each purchase. This technology builds on existing, familiar applications like Direct Debit.'*

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[151] Bank for International Settlements (2023) Project Rosalind: developing prototypes for an application programming interface to distribute retail CBDC https://www.bis.org/about/bisih/topics/cbdc/rosalind.htm
[152] Bank for International Settlements (2023). Project Rosalind. Building API prototypes for retail CBDC ecosystem innovation. https://www.bis.org/publ/othp69.pdf
[153] Barbosa, V. (July 9, 2023) Digital Real Pilot Allows Freezing of User Wallets. Portal do Bitcoin. (Translated into English) https://portaldobitcoin.uol.com.br/piloto-do-real-digital-permite-congelamento-de-carteiras-de-usuarios/
[154][154]Bruning, J. February 24, 2024. There must be a global moratorium on retail CBDCs, Substack. https://jrbruning.substack.com/p/there-must-be-a-global-moratorium
[155] Bank for International Settlements (2023). III. Blueprint for the future monetary system: improving the old, enabling the new. https://www.bis.org/publ/arpdf/ar2023e3.pdf
[156]Bank of England and HM Treasury (2023, February). The digital pound: a new form of money for households and businesses? https://www.bankofengland.co.uk/-/media/boe/files/paper/2023/the-digital-pound-consultation-working-paper.pdf P.32

Researcher Efrat Fenigson recently discussed Israeli CBDC policies concerning the Digital Shekel. Fenigson outlined that the Central bank can use retail banks as distribution intermediaries, and that the CBDC system will be able to enforce limits and permit interest charges.[157] Fenigson noted:

- *The distribution of the Digital Shekel will be two-tiered: instead of direct contact between consumers and the central bank for funding and defunding, an indirect method similar to the distribution of cash today will be used. The banks will purchase digital shekels from the central bank in large quantities and transfer them to customers upon wallet charging.*
- *The system will be able to apply and enforce limits, for example limits on the balance that users are allowed to hold in the Digital Shekel.*
- *The system will support the possibility of applying interest on the Digital Shekel.*
- *Users will be able to access the Digital Shekel through several payment providers, including credit cards, Google/Apple Pay, wearables, payment apps and more.*
- *Unlike most retail CBDC solutions, Israel's model allows users to open a wallet with a payment service provider (PSP) and connect to multiple third-party banks to fund and defund balances.*

The current silence in New Zealand's academic institutions, which follows two decades of a pivot to the market, and increasing precarity, particularly for scholars who research topics which contest the New Zealand governments perspective on a given topic. If public law experts were not so daunted by the prospect of being labelled a 'conspiracy theorist', and in fear of retribution by management or more conservative peers, these experts might easily recognise how early protective laws can be redrafted (undermined) by the quiet passing of secondary legislation – or through legislation passed under urgency. During Covid-19, 2020-2023, New Zealand authorities ratcheted rules and laws to expand mandates through the population via secondary legislation.[158] During this time, ethical principles which promoted a language around uncertainty risk, such as risk by age and health status, were swept aside.[159]

The New Zealand Government are increasingly passing legislation under urgency.[160] [161]

Then there are the questions of nomenclature, and interpretation. Who might explain the nuance between CBDCs guidelines which enable payments to be revoked at a certain date and a programmable money expiry date? It is not difficult to imagine, that once a large proportion of the population have on-boarded, that smart contract nomenclature will extend in law to enable *programmable payments* to more flexibly fulfill, for example, certain Zero Carbon objectives. These objectives might be locked in no matter the weight-of-evidence that hints that climate change might

[157] Fenigson E (March 30, 2024) On the Brink of a Dramatic Change: The Digitalization of Money - The current state of CBDC Projects globally summarized https://efrat.substack.com/p/on-the-brink-of-a-dramatic-change

[158] Bruning J. (April 5 2022) Discussion Paper: COVID-19 Emergency Powers: The New Zealand State, Medical Capture & the Role of Strategic Ignorance. February 25, 2022. Updated April 5, 2022. https://www.talkingrisk.nz/covid-19/

[159] Bruning J. (October 16, 2022) Discussion Paper: COVID-19 in New Zealand: Ethics and the Setting Aside of Normative Principles. PDF available at: https://jrbruning.substack.com/p/covid-19-in-new-zealand-ethics-and?

[160] Daalder, M. (March 3, 2024). Govt sets record for laws passed under urgency in first 100 days. Newsroom. https://newsroom.co.nz/2024/03/08/govt-sets-record-for-laws-passed-under-urgency-in-first-100-days/

[161] Bruning, J. (November 27, 2023) 24 bills in a few days. Move along, nothing to see here. https://jrbruning.substack.com/p/24-bills-in-a-few-days-move-along?

predominantly be a function of non-man-made influence and not the spectre represented in legacy media.[162] [163] [164] [165]

But for society tied to a Digital ID, with biometric data enabling enhanced surveillance – public protests of possible arbitrary decisions which presume scientific certainty in a still deeply contested, deeply uncertain environment would be seriously impractical.

The programmability of CBDCs carry dual purpose potential, i.e. can be used in clear consensual transparent ways, while similarly carrying demonstrable potential for surveillance and abuse of power. Consenting consumers might approve of smart contract (programmable) functionality in a direct arrangement with a retail corporation. A non-consenting public may be compelled to acquiesce to built-in smart contract functionality where the terms and values of that functionality are set by Central banks and/or governments.

The extent to which the public are aware of the repressive potential of biometrically-aided digital IDs and CBDC technology will likely be mediated by the extent to which legacy media are prepared identify and disclose the extent of surveillance, and the potential harms.

For example, the Chinese social credit system (SCS) is:

> *'essentially a surveillance system because the first step to generate social scores for individual citizens is to collect massive information concerning citizens' social, personal, financial, and political activities.'* [166]

The Chinese SCS is enabled by a vast camera surveillance network that is integrated with facial recognition technology. A centralised database enables the government to cross-reference surveillance footage with other forms of digital data.[167] The SCS is less visible to the public than physical repression, and strong government control of public information enables the SCS to be disguised under a social-order-maintenance function. Yet it is relatively easy for the Chinese government to punish violators by lowering their 'social credits'. [168]

If Digital ID/CBDCs were in common use during COVID-19, it is likely that Digital IDs would be the identity required for access to public places and services. It is likely that the biometric data held by the Department of Internal Affairs would enable protesting citizens to be more quickly identified. Composability functions could enable accounts of protesting citizens to be bundled together and their CBDC accounts suspended or debited.

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[162] Curry J. (2023) Climate Uncertainty and Risk: Rethinking Our Response. Anthem Environment and Sustainability Initiative.
[163] Pielke, R. (2024) Climate Policy Rethink Substack: The Honest Broker. https://rogerpielkejr.substack.com/p/climate-policy-rethink?
[164] Alexander,R. (2024). Weather Extremes in Historical Context, Report 60, The Global Warming Policy Foundation. https://www.thegwpf.org/content/uploads/2024/03/History-Weather-Extremes.pdf?
[165] Bailey R. (2024) NOAA Billion-Dollar Weather Disasters Are Not Evidence of Climate Change. *Reason*. https://reason.com/2024/04/25/noaa-billion-dollar-weather-disasters-are-not-evidence-of-climate-change/
[166] Xu X, Kostka G and Cao X. (2021). Information Control and Public Support for Social Credit Systems in China. *The Journal of Politics*. 84:4 doi 10.1086/718358
[167] Wong LXW and Dobson AS (2019) We're just data: Exploring China's social credit system in relation to digital platform ratings cultures in Westernised democracies. *Global Media and China*. 4:2;220-232. Doi 10.1177/2059436419856090
[168] Xu X, Kostka G and Cao X. (2021). Information Control and Public Support for Social Credit Systems in China. *The Journal of Politics*. 84:4 doi 10.1086/718358

Relevant facts that citizens might object to were out of scope. This includes the contradictory science that demonstrated that the government was demanding that people lock-down for a virus where it was known by February 2020 that:

- Covid-19 only posed severe risk to the elderly and extremely multimorbid.
- People who already had acquired natural immunity would be the safest people to take care of the elderly and multimorbid;
- The vaccine technology was a new technology that could not match natural immunity and had not undergone carcinogenicity or mutagenicity testing.

These were all somewhat surprisingly, irrelevant to the government intent on fulling an earlier predetermined objective of high vaccine injection rates.[169]

It is easy to understand that these technologies would enable the machinery-of-government to move much more swiftly to cancel dissent, even if equal treatment resulted in unfair or unequal outcomes.

## CENTRAL BANK/FINTECH LANGUAGE: MONETARY SOVEREIGNTY AND INCLUSION

On February 15, 2024 a CBDC Business Plan Storyboard was presented to the RBNZ Board.[170]

The Storyboard explains that digital cash can be variously known as central bank digital currency, NZ CBDC, and digital dollar throughout the document. The RBNZ express concern that

> *'central bank money – principally cash – is under threat and there are serious risks that monetary sovereignty and financial inclusion could be undermined.'*[171]

Monetary sovereignty and financial inclusion are the common rationale given by Central banks to justify the introduction of CBDCs.[172] Concerns relating to 'monetary sovereignty' were prompted by Facebooks announcement in 2019 that they planned to release a digital currency. This resulted in the BIS, in that same year, establishing a unit to support Central bank CBDC work. Central bank officials were concerned that if CBDCs are not present, that there would be a risk from currency substitution by stablecoins whose value is fixed to a basket of currencies, and backed by a reserve of assets.

In October of the following year, the Bank of Canada, European Central Bank, Bank of Japan, Sveriges Riksbank, Swiss National Bank, Bank of England, Board of Governors of the Federal Reserve and Bank for International Settlements published a joint report.

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[169] Bruning J. (Apr 5 2022) Discussion Paper: COVID-19 Emergency Powers: The New Zealand State, Medical Capture & the Role of Strategic Ignorance. February 25, 2022. Updated April 5, 2022. https://www.talkingrisk.nz/covid-19/

[170] RBNZ (December 2023) The Future of Money – Central Bank Digital Currency (CBDC). CBDC Business Plan storyboard Mapping the way forward https://consultations.rbnz.govt.nz/money-and-cash/digital-cash-in-new-zealand/user_uploads/cbdc-exploration-business-plan-storyboard-1.pdf

[171] RBNZ (December 2023) The Future of Money – CBDC Business Plan storyboard. P.9-10

[172] Chia C and Helleiner E. Central bank digital currencies and the future of monetary sovereignty. Finance and Space. 1:1;35-48. DOI: 10.1080/2833115X.2023.2273544

The joint report outlined the themes of monetary sovereignty and inclusion and the problem of a digital 'run' to foreign CBDCs. Central banks are worried that foreign, early adopter Central banks who release foreign CBDCs might displace them if they lag in issuing CBDCs.[173]

Unfortunately, if this technology race is outside of the purview of democratic governments and constitutional experts, it might be a case of a race to the bottom.

**The language used by the RBNZ imitates global Central bank messaging around 'monetary' sovereignty.**

Accenture and RBNZ claim CBDC operability will 'protect' monetary sovereignty which is:

> *'challenged through the emergence of innovation in money and payments which include cryptoassets, distributed ledgers, smart contracts, digital currencies issued by global technology companies.'*

Given this context, it might be useful to contemplate that the New Zealand dollar (NZD) is our sovereign currency. It is the role of financial markets regulator (RBNZ) to promote trust in financial markets – the digital cash used by these markets is NZD (in addition to physical cash) -our sovereign currency. The RBNZ claim that they have to protect 'monetary sovereignty' - but isn't their larger role to control free market institutions so that trust in the institutions and the NZD – our sovereign currency - is sustained? How the banks stewardship responsibilities concerning their oversight of the financial sector and that role which preserves trust in New Zealand's already digital sovereign currency i.e. the existing New Zealand (fiat) dollar, might be threatened if the RBNZ's power stretched to owning their own retail financial CBDC ledger is not addressed in the April 2024 RBNZ consultation documents. Rather the bank is concerned with cash being under threat and using the term 'monetary sovereignty.' We suspect this is a subtle but important distinction.

The RBNZ is concerned that New Zealanders would turn away from transactions in New Zealand fiat. Public confidence in the financial system and the trustworthiness of a domestic currency is not determined by the power of a Central bank to issue a currency, but by a wider regulatory environment.

Chasing technology does not engender trust, and the fact that smart contracts will be built into CBDCs that the public has no control over, that decision-making over smart contract values would be outside of parliamentary oversight reduces trust further. Of greater issue is whether Parliament would be undermining democratic sovereignty by delegating powers of digital money creation to the banking regulator.

The RBNZ Storyboard which was presented to the governance board states: Central banks are investing in digital currencies. This is misleading – the RBNZ and central banks are directing funding resources to develop white papers that support their campaign for the power to create their own digital currency (print digital money in a digital ledger) – the CBDC.

RBNZ appear to believe that they should take on a political role and state that:

> *'the lack of public access to a digital form of central bank money increasingly limits our ability to meet changing needs and undermines the role of central bank money in the economy.'*

Does this mislead the public?

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[173] Bank for International Settlements (2020) Central bank digital currencies: foundational principles and core features. Report no 1 in a series of collaborations from a group of central banks. https://www.bis.org/publ/othp33.pdf

- Firstly, historically, access to physical cash is a function of socio-economic status, itself a function of broader implementation of monetary and fiscal policy;
- Secondly, the RBNZ should not have the powers or the ability to 'meet changing needs'. They are a bank regulator and should prioritise their obligations to steward a sound financial system and steward monetary policy.

Debate and discourse fleshing out RBNZ claims are non-existent. Canadian political scientists Colin Chia and Eric Helleiner highlight that there is negligible research discussing the role of CBDC initiatives in preserving monetary sovereignty, and it is information produced by central bank officials that dominate official debates on this topic.[174]

While CBDCs present many benefits for Central banks, there is a blurring of the lines between monetary and fiscal policy. Central banks envisage that CBDCs will give them the power to engineer smart contracts to drive behaviour, applying both carrot and stick incentives. This might include 'helicopter drops' (direct transfers to the public that might conventionally be directed through welfare and benefits payments); and the use of programmable money (where transfers might have an expiry date or be conditional upon the purchase of certain goods).

Chia and Helleiner note Julian Gruin's[175] approximation of these activities with social engineering, and social control, stating:

> *'Chinese Communist Party (CCP) authorities are attracted to the broader ways in which a CBDC can be used to shape citizens' economic behaviour because it constitutes 'a new data collection system that in turn enables other algorithmic technologies to be deployed to actively reshape market dynamics.'*[176]

The RBNZ Storyboard does not articulate the role of budgetary appropriations and the methods by which appropriations processes can be used to inject money into the New Zealand economy and promote financial inclusion via increasing benefit payments, housing, skills and training, through jobs creation and education. This is the role of Parliament and fiscal policy, a responsibility that is undermined when elected governments focus on deficit spending. Rather the Storyboard claims that as an alternative to private money, CBDCs will contribute to 'social and financial inclusion.'

Historically the role of decision-making in relation to societal wellbeing and participation has been attributed to parliamentary processes and democratic deliberation, such as increasing benefits and access to health and education - not the choice of a Central bank that operates largely outside of parliamentary and public scrutiny.

The RBNZ claims that physical cash is here to stay. The RBNZ have the power to protect access to physical cash and ensure that physical cash is not undermined by increasing transaction costs. Historically, central banks only created 3-6% of the money supply, and their powers of direct creation were limited. Unfortunately, surface-level assurances by the RBNZ that physical cash will be protected are weak. Even as difficulties with currency access during the Kaikoura earthquake and Hawkes Bay

[174] Chia C and Helleiner E. Central bank digital currencies and the future of monetary sovereignty.
[175] Gruin, J. (2021). The epistemic evolution of market authority: Big data, blockchain and China's neostatist chal-lenge to neoliberalism.Competition & Change,25(5), 580–604. https://doi.org/10.1177/1024529420965524
[176] Chia C and Helleiner E. Central bank digital currencies and the future of monetary sovereignty. Finance and Space. 1:1;35-48. DOI: 10.1080/2833115X.2023.2273544

flooding reinforced the importance of cash as a currency, the Storyboard discloses that the RBNZ is exploring offline capability which would enable the RBNZ to dispense entirely with cash.

Governments can fail to implement policy that might protect the use of cash and protect communities from accessing cash from retail banks thereby potentially making cash more difficult and expensive to transact. They can also remove large denomination notes, and fail to increase denomination as inflation changes the value of the currency.

***Inclusion* language is used intensively through the RBNZ and Central bank papers.** This language, designed to secure social license 'reducing inequities', is a propagandistic term, or rhetorical device.

The RBNZ infer that unbanked New Zealanders will voluntarily become holders of that CBDC accounts. To do this these unbanked populations, often poor and marginalised, and in New Zealand, Māori and Pasifika with a low distrust of the state and an experience of intergenerational heavy-handed tactics by nation states, must acquiesce by giving their biometric data to the government in order to sign up for a Digital ID so that they may access the CBDC account.

> *'The choice to hold central bank money is essential for the approximately 50,000 people over 16 years old that cannot, or do not, have a bank account in New Zealand.'*[177]

It is more likely that for a very long time, these communities have resisted the bureaucracy and oversight that comes with holding a bank account. A CBDC account carries even more risk of government oversight. It appears contradictory, as the inclusion narratives are undertaken with the full understanding of the bureaucratic obligations involved.

The claims of inclusion fail to address the role of benefit and welfare payments operated by representative government with budgetary processes which follow democratic processes, may assist to support shifts of the unbanked into having a bank account.

(A 2019 paper by the DIA[178] a 'Digital Inclusion Blueprint' set 'out the vision and context for digital inclusion in New Zealand' and identified 'what actions are already underway and where the gaps' lay - however did not discuss the policy agenda relating to digital identity or central bank digital currencies.)

Therefore, while digital cash (and CBDCs) are mooted to promote inclusion, indigenous communities – the communities who Central banks claim will most benefit from digital cash 'inclusion', have already observed that digital cash with strings attached undermines the autonomy of already their disenfranchised populations. However, as is discussed below, their opposition to digital cash has been ignored and undermined by the authorities keen on moving the cashless technology forward.

At a seminar on inclusion in November 2022 IMF Seminar on inclusion, ex People's Bank of China, IMF Deputy Managing Director Bo Li stated[179]:

> *'CBDC can allow government agencies and private sector players to programme to create smart contracts, to allow targeted policy functions. For example, welfare payments, for example,*

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[177] RBNZ April 17, 2024. Digital cash in New Zealand. Consultation paper. https://consultations.rbnz.govt.nz/money-and-cash/digital-cash-in-new-zealand/user_uploads/digital-cash-in-nz.pdf

[178] DIA (May 2019) The digital inclusion blueprint Te Mahere mō te Whakaurunga Matihiko https://apo.org.au/node/233871

[179] International Monetary Fund. October 14, 2022. IMF Seminar: Central Bank Digital Currencies for Financial Inclusion: Risks and Rewards. https://meetings.imf.org/en/2022/Annual/Schedule/2022/10/14/imf-seminar-cbdcs-for-financial-inclusion-risks-and-rewards. https://rumble.com/v1p5vbt-imf-chief-digital-currency-will-control-what-people-can-and-cannot-buy.html

*consumption coupons, for example, foodstamps. By programming CBDC those money [sic] can be precisely targeted for what kind of people can own and what kind of use this money can be utilized. For example for food. So this potential programmability can help government agencies to precisely target their support to those people who need support.'*

Governments can already precisely target communities in need through benefits and welfare payments.

Digital Cash Consultation Note #3 states that inclusion (in the context of digital cash):

*'arises when people have agency over their interactions with money and payments.'* [180]




**Figure 10 Carstens (April 2024) A vision of the future financial system Peterson Institute for Int. Economics**

The rationale discussed does not present any opportunities that cannot be addressed in policy in relation to existing digital (fiat) currency and indeed may be heavily contradicted by the Australian cashless debit trial, discussed below. Inclusion and reduction of inequities should more appropriately be designed through democratic and whole of government processes. This includes using the

- Appropriations process to fund infrastructure; the
- Fostering of locally owned banks; and the
- Design of rules and guidelines that ensure access to financial services and limit transaction costs for low-income people.

The momentum for global networked unified ledgers revolves around innovation and efficiency. BIS General Manager Agustín Carstens claims that the financial system is too slow, too costly; that the

[180] Inclusion opportunities for digital cash Digital Cash Consultation Note #3. https://consultations.rbnz.govt.nz/money-and-cash/digital-cash-in-new-zealand/user_uploads/inclusion-opportunities-for-digital-cash_final-1.pdf

range of financial services is too limited. Yet 'streamlining' all services through networked unified ledgers on a global 'Finternet'[181] create an entirely new range of democracy problems.

This includes who to turn to when a problem around asset ownership or smart contract execution, occurs. In a retail environment, through court processes this might be worked out. But when these issues relate to transactions between semi-independent domestic central banks, and the BIS with its legal immunity and privilege, the answers might not be so forthcoming.

Therefore, networked digital unified ledgers can operate as a retail private sector tier (with oversight by the Central banks), enabling all the innovation and efficiencies of the free market. However, the unanticipated questions around World Bank, BIS and IMF powers and oversight, and the potential delegation of powers to these agencies, might give local democracies another reason to retire to a safe distance and watch the progress of retail CBDCs and programmable ledger technology in the free market.

RBNZ claim that digital financial inclusion will be enhanced by 'offering greater consumer choice such as basic money and payment services and offline payments'. [182] However, they underplay the potential for people to leave retail banks (known as disintermediation[183]) for Central banks, shrinking consumer choice as bank failures arise from these shifts. However, retail banks may be beneficiaries in the shorter term as part of the networks using CBDCs (discussed by Efrat Fenigson, above), and this may explain why little discussion on CBDCs has come from retail banks.

If retail banks do not support insolvent people, laws can be enacted requiring these banks to support no-charge, debit only basic accounts. Choice can be further addressed by policies which encourage local, domestically owned savings and loans businesses that are incentivised to loan to small and medium-sized businesses for development of businesses rather than asset purchases.

# 6. DIGITAL CASH TRIALS: AUSTRALIA, CHINA, NIGERIA

## AN EARLY FAIL? THE AUSTRALIAN 6-YEAR DIGITAL CASH TRIAL

Communities that do not have a bank account, that are 'unbanked' are poor. Fifty-four percent of adults in developing countries lack a bank account. However, CBDC bank accounts for the poorest may be unappealing, impractical and threaten local cultural practices.[184]

An Australian experience suggests that access to cashless societies may not work for poor and indigenous communities. This is occurring at precisely the same time that Australian banks are pulling out of rural regions citing the cost of supporting these regions. Banks are withdrawing from these

[181] Carstens A. and Nilekani N. (2024) Finternet: the financial system for the future. Bank for International Settlements. https://www.bis.org/publ/work1178.htm
[182] RBNZ (Apr 17, 2024). Digital cash in New Zealand. Consultation paper. P.20.
[183] Bank of England (March 2020). Discussion Paper: Central Bank Digital Currency - Opportunities, challenges and design. https://www.bankofengland.co.uk/-/media/boe/files/paper/2020/central-bank-digital-currency-opportunities-challenges-and-design.pdf
[184] Dupas P et al (2018). Banking the Unbanked? Evidence from Three Countries. American Economic Journal: Applied Economics 2018, 10(2): 257–297

struggling communities at the very time that their profits have surged[185] [186] with increased returns amplified by marginal returns on interest rate rises.[187]

In a recent Yahoo article, the community of Kununurra lost access to ATMs after ATMs were repeatedly damaged, and banking staff suffered 'challenges'. The article quoted Royal Melbourne Institute of Technology associate professor of finance Dr Angel Zhong who predicted that Australia was moving towards being a functionally cashless society by 2030.[188]

The Yahoo piece did not discuss that the Kununurra removal of cash machines follows a 6-year trial that dramatically limited the amount of cash people throughout the East Kimberley region were given access to. This predominantly indigenous (First Nations) population has high rates of poverty, intergenerational trauma and disadvantage. The forcing of communities away from cash resulted in local communities over the period of the trial, increasing their resentment and opposition to the trial. The response of attacking ATMs may have been more complex than Yahoo represented.

The cashless debit card trial (CDC) commenced in the East Kimberly in December 2017. It targeted Indigenous Australians and was designed to reduce spending on alcohol, gambling and illegal drugs, determine whether the reduction decreased violence or harm, to include community 'wrap around' services, and determine whether the trial encouraged socially responsible behaviour. A private company was contracted to implement the CDC. The CDC trial found in the first year, that by limiting cash, increased material hardship and was found to contribute further to the disempowerment of those 'already marginalised by relational poverty. Wrap around services failed. Researchers additionally found that the government had promoted the policy based around community and consultation, giving the:

> *'impression that the diverse populations in Kununurra and Wyndham were unified in approval of the card. They do not reflect the substantive opposition to the card from many people living in the study site; indeed, the White Card has become a symbol for disempowerment and neocolonial government control.'*[189]

The trial continued for six years. Further papers found that the trial imposed, through its structuring of disincentives to claim financial support, that it eroded autonomy while imposing additional administrative burdens relating to compliance, learning and psychological costs.

> *'Cardholders experience heavy administrative burdens in securing essentials and managing their social security income via the CDC, seeking a reduction of their restricted payment portion, and*

[185] Australia Banks: Shareholder Equity: Retained Profits. https://www.ceicdata.com/en/australia/balance-sheet-banks/banks-shareholder-equity-retained-profits#:~:text=Australia%20Banks%3A%20Shareholder%20Equity%3A%20Retained%20Profits%20data%20is,low%20of%2038%2C312.200%20AUD%20mn%20in%20Jun%202004.
[186] KPMG Major Australian Bank Half Year Analysis (2023) https://kpmg.com/au/en/home/insights/2023/05/major-australian-banks-half-year-results-2023.html
[187] Barrett J. (2023) Commonwealth Bank profit jumps to $5.15bn amid rising interest rates. *The Guardian*. https://www.theguardian.com/australia-news/2023/feb/15/commonwealth-bank-profit-jumps-to-515bn-amid-rising-interest-rates
[188] Seeko T. (February 15, 2024) Coles stops giving cash out in store. Yahoo. https://au.finance.yahoo.com/news/only-coles-in-australia-that-wont-give-out-cash-013043183.html
[189] E Klein and S Razi. (2017) The Cashless Debit Card trial in the East Kimberley. Working Paper No. 121/2017. P.13https://apo.org.au/node/122191

*seeking a well-being exemption or a financial responsibility exit to regain their budgetary autonomy'.*[190]

A paper by Philip Mendes and colleagues exploring the impact of Aboriginal and Torres Strait Islander submissions to six parliamentary inquiries into the Cashless Debit Card (CDC)[191] found that government agencies routinely enthusiastic about adoption often undermined and ignored local protests by Indigenous organisations. While Indigenous organisations were initially supportive, as the trials progressed they:

*'changed their views as the Coalition government failed to deliver the community-based implementation approach and associated holistic support services promised. Indeed, the large majority of written Indigenous community submissions to those inquiries strongly opposed the CDC and the associated government bills.'*

Throughout the 6 trials, the documented adverse or unfavourable experience by local people was shown to be 'written out' in favour of a predetermination that CDCs are beneficial:

*'Additionally, the official inquiry reports seem to have largely minimised or ignored the major objections voiced by Indigenous community organisations concerning the CDC. All six inquiry reports selectively highlighted evidence that favoured the government policy narrative, and consequently endorsed the merits of government legislation aimed at extending existing CDC trial sites and/or introducing new sites. It seems, therefore, that the majority of Indigenous community submissions had little or no influence either on the report recommendations or on associated government policy development and decision-making. It appears that the former government largely used the inquiries as a means of legitimising (Klein,2020) their existing policy narrative and agenda to introduce and extend the CDC, rather than to generate new ideas and evidence that would inform policy planning and development.'*[192]

The Australian trial demonstrated that the additional administration necessary for compliance not only undermined autonomy but led to increased resentment of authorities.

The 'inclusion' narrative has primarily been northern hemisphere banks with no local indigenous communities. Māori communities might be concerned about not only the drafting of policies that appear to write out cultural and ethical reluctance to be exposed to increased government oversight but the implications when Central bank ledgers link together as global networks.

Indigenous populations should have the right to be independently informed on the potential for their capacity for *agency* when the BIS may have global oversight of global CBDC payments via networked unified ledgers. Networked unified ledger design is designed to operate globally on two tiers (two sets of rails). A private bank (i.e. non-CBDC) tier, and a Central bank CBDC tier. Much of this is not in place. However once people have Digital IDs and CBDC accounts, extricating themselves and shifting back to a private sector arrangement might be difficult.

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[190] Bielefeld S. Administrative burden and the Cashless Debit Card: Stripping time, autonomy, and dignity from social security recipients. *Aust J Publ Admin*. 2021; 80: 891–911. https://doi.org/10.1111/1467-8500.12509

[191] Mendes, P., Roche, S., Conway, L., & Castan, L. (2023). Co-design or top-down welfare conditionality? An analysis of the impact of Aboriginal and Torres Strait Islander submissions to six parliamentary inquiries into the Cashless Debit Card. Australian Journal of Public Administration, 82, 167–193. https://doi.org/10.1111/1467-8500.12558

[192] Mendes, P., Roche, S., Conway, L., & Castan, L. (2023). Co-design or top-down welfare conditionality? An analysis of the impact of Aboriginal and Torres Strait Islander submissions to six parliamentary inquiries into the Cashless Debit Card. *Aust J Publ Admin* 82, 167–193. P.183 https://doi.org/10.1111/1467-8500.12558

Indigenous populations should be able to discuss questions and obtain legal advice relating to who will have overall oversight of the theoretically democratic-in-notion CBDC tier, which local and indigenous communities may find deeply problematic. In short, such arrangements raise the spectre of colonisation and extraction, as the World Bank and BIS would presumably have oversight, asserting the global rules and guidelines, while also having access to the information on these ledgers.

The RBNZ has not appeared to consider that isolated, indigenous and low-income communities often prefer the simplicity over cash management, as cash is culturally normative, and an important part of the local economy.

The RBNZ may be unwilling to acknowledge that many of unbanked New Zealand people may not have a bank account because of low-trust of any financial institution. The RBNZ is yet to address the issue that for these people to access a CBDC it is probable that they would have to supply biometric data in order to secure a Digital ID and then secure access to central bank money. Control through the Central bank and enhanced oversight by public sector agencies are unlikely to appease their concerns.

## CHINA AND NIGERIA

Global trials which reflect attempts to onboard citizens onto CBDC platforms have been implemented without the consent of citizens. The Nigerian and Chinese trials are the most public to date. Despite the reluctance of citizens, those countries are continuing to pursue a transition to CBDCs indicating that they are not 'trials' but learning processes during adoption phases. The scholarly literature reflects the global focus on innovation, economic growth and the technical aspects of adoption in the early trial countries.

(1) e-CNY Trial implemented where state employees receive salaries in the e-CNY. Chinese citizens quickly transfer the e-CNT into cash.[193]
(2) eNAIRA in Nigeria. Citizens have been reluctant use CBDCs.[194] The IMF reported that:

> *The average number of eNaira transactions since its inception amounts to about 14,000 per week—only 1.5 percent of the number of wallets out there. This means that 98.5 percent of wallets, for any given week, have not been used even once. The average value of eNaira transaction has been 923 million naira per week—0.0018 percent of the average amount of M3 during this period. The average value per one transaction has been 60,000 naira.* [195]

[193] Zuo M (May 13 2024) China is paying some workers in digital yuan – but few are choosing to use it https://www.scmp.com/economy/china-economy/article/3262194/china-paying-some-workers-digital-yuan-few-are-choosing-use-it
[194] Osae-Brown A et al. (2022) Digital-Currency Plan Falters as Nigerians Defiant on Crypto. Bloomberg. https://www.bloomberg.com/news/articles/2022-10-25/shunned-digital-currency-looks-for-street-credibility-in-nigeria
[195] Ree J (May 16 2023) Nigeria's eNaira, One Year After. International Monetary Fund Working Paper. https://www.imf.org/en/Publications/WP/Issues/2023/05/16/Nigerias-eNaira-One-Year-After-533487

# 7. DIGITAL IDENTITY SYSTEMS

## DIGITAL IDENTITY – HISTORY OF POLICY DEVELOPMENT

In the earlier sections we have described how the Bank for International Settlements and Fintech sector led policy development and risk framing concerning CBDC development. Foreign institutions and industries who will heavily benefit from a globally co-ordinated architecture and digital infrastructure have led policy development and risk framing for digital identity systems. In this case, the policy development and framing has been led by the World Bank and the Fintech sector.

Digital identities which have been verified through electronic means can be held in a 'digital wallet'. CBDCs can either be managed by Central banks or by a financial intermediary with permission to act as an agent of the Central bank.

> *'Verifiable credentials and digital wallets offer a convenient, secure, and privacy-oriented alternative to current physical and digital identity management systems. A recent example – COVID-19 vaccination certificates – highlights this.'*[196]

The World Bank played a central role in the call to operationalise Digital IDs, commencing in 2015 with its Identification for Development (ID4D) Initiative.[197] In May 2016, the United Nations Digital ID was launched. The policy revolved around inclusion, 'leaving no one behind.'[198]

An NYU School of Law publication has been sceptical of the wide range of benefits that are claimed will be achieved using Digital IDs, and shed light on the role of the World Bank and the ID4D initiative as a thought leader in shaping consensus around benefits, and manufacturing consent for Digital IDs and the use of biometric data through technical assistance and funding.

> *'Within this network, the ID4D Initiative has adopted a variety of roles including idea generator, data collector, convenor, and trusted advisor to national governments. The consensus cultivated through all of these activities seems to rest on an assumption that digital ID systems that are deeply integrated with public and private transactions will be transformative in advancing economic development, furthering inclusion, and laying the foundations for thriving digital societies. This agenda, including its key concepts, models, technologies, and actors, merits further scrutiny—especially in light of the deeply disturbing evidence of human rights harms tied to digital ID systems.'*[199]

In lieu of evidence, the causal relationship between digital ID systems and subsequent benefits remains assumed, rather than proven.

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[196] Sedlmeir, J., Smethurst, R., Rieger, A. et al. Digital Identities and Verifiable Credentials. *Bus Inf Syst Eng* 63, 603–613 (2021). https://doi.org/10.1007/s12599-021-00722-y

[197] June 2022. A Primer on the Role of the World Bank and Global Networks in Promoting Digital ID. Digital Welfare State and Human Rights Project. Center for Human Rights and Global Justice. *NYU School of Law* https://axelkra.us/wp-content/uploads/2022/07/Report_Paving-a-Digital-Road-to-Hell.pdf

[198] ID2020 Summit 2016 https://web.archive.org/web/20200815143525/https://www.un.org/partnerships/ar/news/id2020-summit-2016

[199] June 2022. A Primer on the Role of the World Bank and Global Networks in Promoting Digital ID. Digital Welfare State and Human Rights Project. Center for Human Rights and Global Justice. NYU School of Law https://axelkra.us/wp-content/uploads/2022/07/Report_Paving-a-Digital-Road-to-Hell.pdf

Global consultancy firm Accenture, who is the key adviser to the RBNZ has led the global push for Digital IDs, establishing the private-public consortium ID2020. Accenture is one of the WEFs top 100 strategic partners. Accenture presumably has far greater knowledge of the corporate potential of Digital IDs and CBDCs than nation states. Accenture stated in 2017:

> *'The Accenture prototype is designed to interoperate with existing identity systems so that personally identifiable information always resides "off chain." It aligns to principles of the Decentralized Identity Foundation, of which Microsoft is a founding member, and uses the Enterprise Ethereum Alliance's private, or "permissioned," blockchain protocol.*
>
> *To solve problems faced by people who lack official identities Accenture will leverage its Unique Identity Service Platform to deploy a breakthrough biometrics system that can manage fingerprints, iris and other data."*[200]

In August of 2016 the World Economic Forum (WEF) collaborated with Deloitte to release *A Blueprint for Digital Identity - An Industry Project of the Financial Services Community*[201] following 12 months of research involving interviews and multi-stakeholder workshops with the global financial sector – including TradeMe. The following images provides some indication of the extent to which discussion and policy has *not* been led by nation states, but by the Fintech and Central bank sector.




**Figure 11 WEF (2016) World Economic Forum (2016) A Blueprint for Digital Identity**

[200] Accenture June 19 2017. Accenture, Microsoft Create Blockchain Solution to Support ID2020 https://newsroom.accenture.com/news/2017/accenture-microsoft-create-blockchain-solution-to-support-id2020

[201] World Economic Forum (2016) A Blueprint for Digital Identity - An Industry Project of the Financial Services Community. https://www3.weforum.org/docs/WEF_A_Blueprint_for_Digital_Identity.pdf

In 2017 Accenture created the ID2020 Alliance[202]. The 'holistic, market-based Alliance' include the Rockefeller Foundation, Microsoft, and Gavi – the vaccine alliance.' ID2020 has more large corporations as members, and only one government, Estonia, as a partner. Civil society are not members of the Alliance.

> *'ID2020 is building a new global model for the design, funding, and implementation of digital ID systems and technologies. There is no other multi-stakeholder effort focused on user-managed, privacy-protecting, and portable digital ID.'*

Following this theme, Accenture with their ID2020 partners, crafted 'foundational principles', and drafted specifications for the 'creation of ethical digital identity systems'. ID2020 promoted the desirability of identification systems for proof of injection with the mRNA technology the Covid-19




**Figure 12 Early ID2020 partners.**

'vaccines'. Accenture and their ID2020 partners are not concerned with the ethics of requiring identity for proof of injection from an experimental medical technology product that had not undergone long-term testing for both safety and efficacy, had not been tested for cancer risk, nor that the product trials had under-represented groups with chronic health conditions and pregnant women.

Some of the largest corporations and banks are now partners, including Black Rock, Bloomberg, Deloitte, Ernst and Young, JPMorgan Chase, Nasdaq and PwC (formerly PricewaterhouseCoopers ).[203]

Post-Covid-19, the World Economic Forum continue to advocate for Digital IDs, claiming that although people lack trust in data:

> *'there is one fundamental digital infrastructure layer that can bring transparency to interactions: digital identity.*

And that the risks of doing nothing are high:

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[202] ID2020 at a glance. https://web.archive.org/web/20201101050851/https://id2020.org/uploads/files/ID2020-Alliance-Overview.pdf

[203] Wikipedia. https://en.wikipedia.org/wiki/ID2020

*'The cost of not pursuing digital identities is high. Being able to digitally prove claims is vital to enable paperless, contactless, streamlined processes across public and private sectors.'*

The WEF conceptualise that Digital ID will be tied to every aspect of human life[204]:

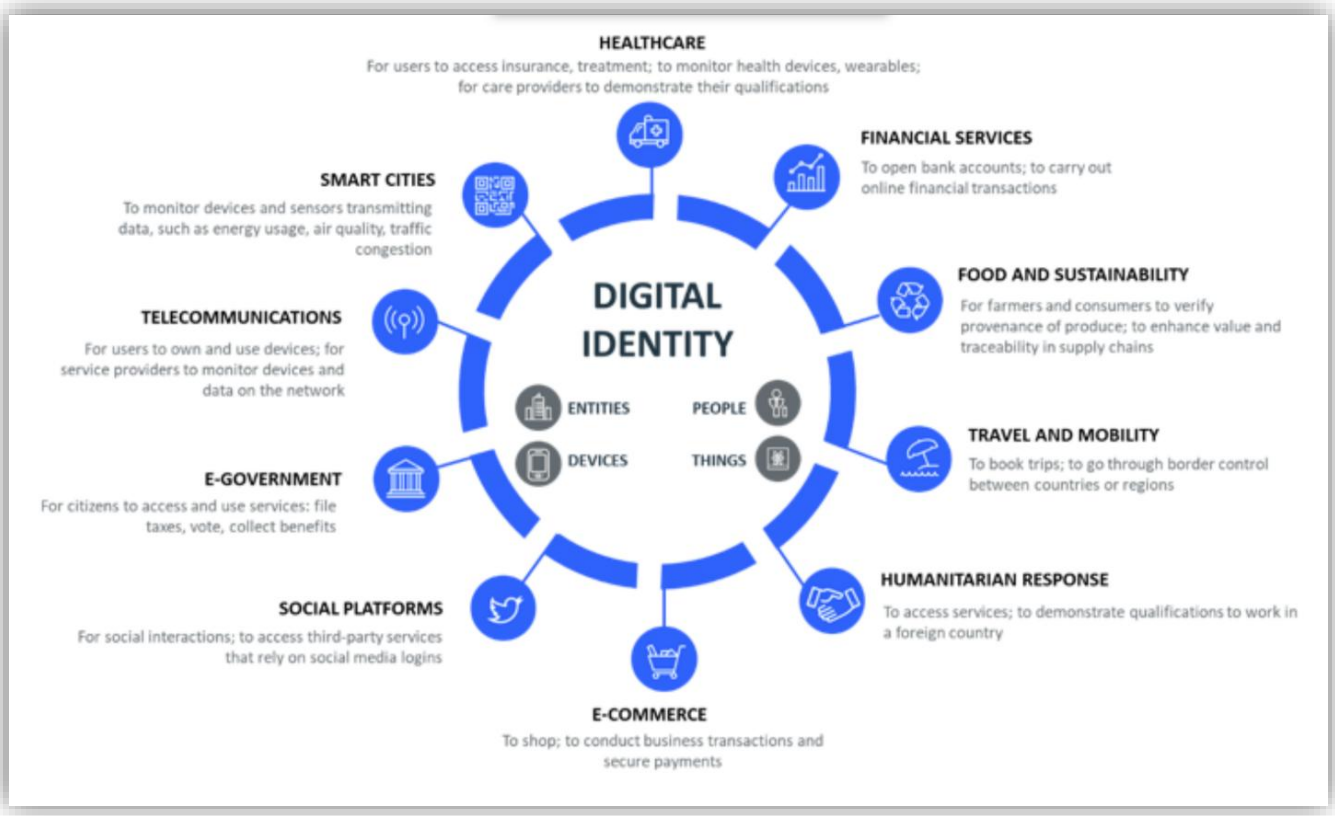



**Figure 13 WEF (2021). How digital identity can improve lives in a post-COVID-19 world.**

The European Union requires member states to make Digital IDs available to all citizens and claims that Digital ID will not be compulsory. Nick Corbishley, the author of *Scanned*, recently discussed how recent steps in Greece contradicted this claim. On April 9, 2024 the government of Greece announced that the Digital Wallet on the mobile phone (the Digital ID)[205] :

*'will be the necessary "tool" for every sports fan who wants to follow his favorite team. The way fans enter stadiums throughout the country will now be done through the Gov.gr Wallet...*

*Based on the Joint Ministerial Decision of the Deputy Minister of Sports Yiannis Vroutsis and the Minister of Digital Governance Dimitris Papastergiou, the new way of entering the stadiums with the Gov.gr Wallet ticket will come into effect from April 9, 2024.'*

In the United States, Senator Josh Hawley introduced the Making Age-Verification Technology Uniform, Robust, and Effective (MATURE) Act.[206]

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[204] World Economic Forum (January 2021). How digital identity can improve lives in a post-COVID-19 world. https://www.weforum.org/agenda/2021/01/davos-agenda-digital-identity-frameworks/

[205] https://tickets.gov.gr/

[206] 1. Making Age-Verification Technology Uniform, Robust, and Effective (MATURE) Act. Introduced February 2023. SB 152. Summary: S.419 — 118th Congress (2023-2024) Congress.gov

## DIGITAL ID'S. HEAVY CRITICISM BY NYU LAW SCHOOL PAPER

A 2022 paper, Paving a Digital Road to Hell? By the Center for Human Rights and Global Justice NYU School of Law[207] heavily criticised the models of Digital IDs that have been promulgated by these large organisations. The policy development that followed the World Bank initial efforts have reflected the concern in this NYU School of Law paper. The key issues include that the specific model promoted by the global actors:

- *Privileges economic identity, is disconnected from legal status, and steers attention away from civil registration.*
- *Threatens a range of fundamental rights, from the right to social security to the right to privacy.*
- *The purported benefits remain mostly unsubstantiated in the absence of serious baseline studies, cost-benefit and value for money analyses, and impact assessments.*
- *It has relied on the legitimacy of the Sustainable Development Goals and human rights to justify its race towards what seems to be an inevitable future.*
- *It has fostered a network of actors who have collectively manufactured a new consensus around digital ID and dressed it in the language of development goals and rights.*
- *It has facilitated network building and learning, including by evangelizing the experiences of Aadhaar in India.*
- *And it has directly supported governments through technical assistance as well as through financing the design and creation of new digital ID systems.*

The authors went on to note:

> *'All too often, digital ID systems are mired in a lack of transparency. Even the legislation underlying digital ID—where it exists—often does not provide adequate information about what the system will entail. Further still, speaking from our own experience, the field of digital ID is inhospitable to 'outsiders' who have not yet learned the vocabulary, such as the difference between foundational and functional identification systems, or between identification and authentication.'* [208]

## CAN SOCIETY *TRUST* NZ'S REGULATORY SYSTEM FOR DIGITAL ID'S?

As we can observe, digital Identity system infrastructure, policies and values have been conceptualised and shaped by the World Bank and by global corporations.

There has been little New Zealand-based public communication disclosing to the public that Digital IDs will be a mechanism in broader framework. Digital.Govt.NZ does not explain how Digital IDs will be required for access to CBDCs, and policy papers have not been released disclosing this. Incentives

[207] June 2022. Paving a Digital Road to Hell - A Primer on the Role of the World Bank and Global Networks in Promoting Digital ID. Digital Welfare State and Human Rights Project. Center for Human Rights and Global Justice. NYU School of Law https://axelkra.us/wp-content/uploads/2022/07/Report_Paving-a-Digital-Road-to-Hell.pdf

[208] June 2022. Paving a Digital Road to Hell - A Primer on the Role of the World Bank and Global Networks

which usher the public to submit to Digital IDs are already in place. It is now difficult to access public sector jobs, tertiary education and funding grants if the applicant does not have a Digital ID.

The obligation to hold a Digital ID appears to be being deployed incrementally, as a form of soft mission creep. The initial strategies, based on a 'carrot and stick' approach require that people sign up for a Digital ID for pre-employment checks in the public sector; as the preferred choice for tertiary enrolment; for internet age verification; and to access sporting events. Digital IDs are designed to be tied comprehensively to human activity. The New Zealand government requires government agencies to use RealMe services.[209]

However, the legislation and regulations deserve careful consideration. New Zealand's Digital ID regulatory authority has been granted limited regulatory powers which do not permit the regulator to assess risk from multiple angles, in order to anticipate long-term risks and protect the wellbeing of the New Zealand public.

In addition, the principles only narrowly relate to pursuing complaints, rather than the providing direction for all officials acting under the powers of Digital Identity Services Trust Framework Act 2023. The effect is that the legislation might not be as trustworthy as it promises to be.

The purpose of New Zealand's Digital Identity Services Trust Framework Act 2023[210] (DISTF Act) is to establish:

- The legal framework for the provision of secure and trusted digital identity services for individuals and organisations
- Governance and accreditation functions that are transparent and incorporate te ao Māori approaches to identity.

The purpose states that the framework might provide secure and trusted digital identity services. But it does incorporate principles highlighted in earlier consultation which dovetail with Constitutional law – including that the rights of people should be of the highest importance. This is important because this legislation will not operate in a siloed manner, it will intersect with other legislation.

Unfortunately, the Cabinet documents and consequent legislation reflects the deficits outlined in an NYU School of Law paper[211] (discussed above in the previous section), while the powers of the Digital Identity Services Trust Framework regulatory authority exhibit many of the characteristics of a captured regulator a situation where the regulated industries end up manipulating the state agencies that are supposed to control them.

Core issues raised by private 'stakeholders' in a secret consultation before the public were made aware of the Digital ID legislation, revealed strong themes of distrust[212]:

[209] Govt.nz Use RealMe to prove your identity online. https://www.govt.nz/browse/passports-citizenship-and-identity/proving-and-protecting-your-identity/use-realme-to-prove-your-identity-online/
[210] https://www.legislation.govt.nz/act/public/2023/0013/latest/whole.html
[211] June 2022. Paving a Digital Road to Hell A Primer on the Role of the World Bank and Global Networks in Promoting Digital ID.
[212] Digital.govt.nz. Research and engagement — Digital Identity Programme https://www.digital.govt.nz/digital-government/programmes-and-projects/digital-identity-programme/research-and-engagement-digital-identity-programme/

*'Evidence gathering also included research and surveys with more than 1000 individuals. These include quantitative surveys and 12 focus groups undertaken both by the Department of Internal Affairs and by Digital Identity New Zealand in 2019 and 2020.'*

Private consultation resulted in the formation of 'Trust Framework Principles'. Yet these principles were not intended by authorities to be integrated into the legislation, to guide officials responsible for administration of the DISTF Act, the development of principles were solely intended to inform the development of the bill, and the rules that 'service, technology and information providers will follow, based on the roles they carry out within the digital identity system'.[213]

While no published report has been released the consultation appeared to result in the establishment of eight Digital Identity Services Trust Framework principles. These principles 'align with the principles in the Data Protection and Use Policy (DPUP) developed by the Social Wellbeing Agency.'[214] [215]:

- People-centred – The rights and needs of people are of highest importance, though not to the exclusion of the needs of other entities in the digital identity system.
- Inclusive - Everyone has the right to participate in the digital identity system.
- Secure - Everyone has the right to expect that personal and organisational information will be stored, shared and used in a secure manner within the digital identity system.
- Privacy-enabling - Privacy is a critical enabler of trust in the digital identity system.
- Enabling Te Ao Maori approaches to identity - and needs and aspirations of Māori to be achieved
- Sustainable - supports its technical, social, and economic sustainability in the long-term.
- Inter-operable - Personal and organisational information should be able to be re-used across services, sectors and geographies without security or privacy being undermined.
- Open and transparent - maintained in an accessible, responsive and accountable manner.

These principles were not drafted into the DISTF Act, they merely concerned the writing of the rules to push the Act through. By comparison, the DISTF Act principles are very narrowly constructed. The DISTF Act principles exclusively concern an obligation to other than to give effect to te Tiriti o Waitangi/the Treaty of Waitangi, and principles involved in resolving complaints (section 68). Principles for complaints do not prevent the abuse of power in the first place, and they presume that people have the capacity to complain.

Therefore, the DISTF Act contains no overarching principles which might guide officials to ensure that those administering the Act must abide by fundamental constitutional principles and values of New Zealand law, such as to protect the dignity of the individual and protect fundamental freedoms (liberty).[216]

[213] Trust Framework principles. https://www.digital.govt.nz/digital-government/programmes-and-projects/digital-identity-programme/trust-framework/trust-framework-principles/
[214] Cabinet papers. Proactive Release Progressing Digital Identity: Establishing a Trust Framework Cabinet Paper. Page 7. https://www.dia.govt.nz/diawebsite.nsf/Files/Proactive-releases/$file/Combined-Digital-Identity-Proactive-Release.pdf
[215] Social Wellbeing Agency (2021) Data Protection and Use Policy (DPUP) https://www.digital.govt.nz/assets/Standards-guidance/Privacy/Data-Protection-and-Use-Policy-DPUP-January-2022-Version-1.2.pdf
[216] Legislation Design and Advisory Committee, Legislation Guidelines 2021 Edition https://ldac.org.nz/assets/Guidelines/LDAC-Legislation-Guidelines-2021-edition.pdf

The rationale was primarily based on economic and social benefits. The Cabinet paper that was released when public consultation opened on the Bill included the full Impact Statement.[217] The Impact Statement by the Department of Internal Affairs (DIA) based the rationale for the trust framework on its potential to:

> *'Deliver significant economic and social benefits to private and public sector organisations.'*

The DIA limited their consideration of likely risks or unintended impacts to seven points[218]:

- Public misconception that information is at greater risk of exposure and/or misuse.
- Costs of compliance testing become unduly high.
- Information could remain siloed because businesses and organisations do not choose to participate in the Trust Framework.
- The Trust Framework does not enable Te Ao Māori approaches to identity.
- Uptake remains low.
- Social Inequities creep in.

The potential for digital identities to threaten a range of human rights were not considered. The paper stated[219]:

> *'There are no human rights implications from this paper.'*

The public were excluded from early consultations, while a large group of government agencies and industry providers were invited to contribute.[220]

The rhetoric around inclusion skirts the compulsory biometric data gathering, which many people find ethically and culturally problematic. Facial images and liveness testing are the biometric data which are compulsory to secure a RealMe verified identity. [221] However, officials have been struggling with the liveness testing[222] with 'Current success levels are approximately 55%' instead of 90%.

With the DISTF Act in force, the DIA is now involved in establishing regulations. It is unclear which stakeholders have been invited. In August 2023 the DIA released a Discussion paper[223] which included the proposals for the development of regulations required to enable the establishment of the Digital Identity Services Trust Framework. The Physicians and Scientists for Global Responsibility (PSGRNZ) had signalled our interest by sending in an in-depth submission to the initial Bill.[224] PSGRNZ were not advised of the discussion paper.

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[217] Proactive Release Progressing Digital Identity: Establishing a Trust Framework Cabinet Paper. https://www.dia.govt.nz/diawebsite.nsf/Files/Proactive-releases/$file/Combined-Digital-Identity-Proactive-Release.pdf
[218] Pages 48-49/58
[219] Page 13/58
[220] Pages 9-10/58.
[221] https://www.dia.govt.nz/diawebsite.nsf/Files/OIA-Releases-2022/$file/OIA-2223-0235.pdf
[222] https://www.dia.govt.nz/diawebsite.nsf/Files/OIA-Releases-2023/$file/OIA-2324-0187.pdf
[223] DIA (August 2023). Digital Identity Services Trust Framework Regulations Discussion Paper. https://digitalidentity.nz/wp-content/uploads/sites/25/2023/09/DISTF-Regulations-Discussion-Paper.pdf
[224] PSGRNZ. (December 2, 2021). Submission: Digital Identity Services Trust Framework Bill https://psgr.org.nz/component/jdownloads/send/1-root/86-digidentity

In late 2024 a December 2023 Regulatory Impact Statement was released[225]. The context behind the Impact analysis is that:

> *'many transactions that require the provision of digital identity information, such as online banking, claiming a social services payment, or opening a utilities account online, need high levels of security to ensure users personal information is safe and their privacy is protected.'*

The DIA, the author of the analysis, acknowledges that while digital identity services are seen as efficient, digital information can be more easily accessed, copied and shared. The DIA's analysis considered that three critical components are required for the modern digital identity system – the finalisation of the regulatory framework, modernising RealMe products and services and the issuing of Verified Credentials and working with other agencies and the public sector to encourage participation in the Trust Framework, to produce and issue verifiable identity credentials.

In the meantime, public sector institutions are making it difficult to access services without a Digital ID. Digital IDs are increasingly demanded to secure employment in government agencies. There is no reason *not* to trust historic forms of ID, including drivers licenses and passports[226]:

> *'New Zealand has the lowest fraud rate of our partner countries (Australia, Canada, United States of America, United Kingdom and Ireland. For 2023, 11 cases of fraud were detected, representing 0.0023% of the 472,872 passports issued.'*

The structure and content of the DISTF Act reveal that the regulatory authority (which comprises two administering bodies, Trusted Framework' (TF) Board and a TF Authority) has little real power. The TF Authority is tasked with establishing, administering and maintaining the accreditation regime which is voluntary. The board recommends draft TF rules and regulations to the Minister, and the authority is responsible for enforcing the rules.

The TF Authority relies on the TF provider (digital identity service provider) to supply information. The only way the TF Authority seems to be able to look for gaps and risks is after someone complains after they believe there has been a breach of the TF rules, regulations, terms of use, accreditation marks, or provisions of the Act. They may investigate an issue that may be the subject of a complaint and 'make any inquiries'. However, the industry friendly legislation states that before any investigation occurs, the TF provider must be notified that the TF Authority is commencing an investigation. In addition, the investigation must be conducted in a timely manner. With the corporation advised from the get-go, the right of that corporation to provide a written response to the TF Authority (?), it appears unlikely that investigations would occur. The stress on officials with a major corporation anxiously waiting for a decision, is likely to produce a chilling effect on any investigations.

The TF board and TF Authority have not been provided with a mandate nor resources to surveil foreign jurisdictions and gauge global risks. The legislation does not require that an independent budget is set aside for such investigations. There also seems to be an innocent expectation that the large transnational corporations that aim to participate in this process in countries that deploy digital identities, will behave conscientiously. There seems to be no expectation that an important role of maintaining public trust would be that the TF Authority would have powers to conduct preliminary investigations to assess potential predatory actions and behaviour of the largest corporations in other

[225] Digital Identity Services Trust Framework Regulations https://www.dia.govt.nz/diawebsite.nsf/Files/Proactive-releases-2024/$file/Regulatory-Impact-Analysis-Digital-Identity-Services-Trust-Framework-Regulations.pdf

[226] OIA request 23/24 0457 Request for information on false passports. https://fyi.org.nz/request/25206/response/96589/attach/4/Response.pdf

jurisdictions, and consider such risks to New Zealand, when they are also Digital Identity Framework service providers domestically.

## 8. AN INFLUENCE WEB: REGULATORY CAPTURE

*Quis custodiet ipsos custodes. "Who will guard the guards themselves?"*

The absence of domestic academics researching the constitutional dilemma of regulatory capture in New Zealand might help explain why no academic or legal experts have yet considered the potential for undue corporate industry influence when it comes to policy and regulation of CBDCs, Digital IDs, and the relationships therein. The classic explanation of regulatory capture is[227]:

> *'the process through which special interests affect state intervention in any of its forms, which can include areas as diverse as the setting of taxes, the choice of foreign or monetary policy, or the legislation affecting R&D. According to the narrow interpretation, regulatory capture is specifically the process through which regulated monopolies end up manipulating the state agencies that are supposed to control them.'*

The classic model outlined by George Stigler presumes that regulatory capture involves incentives provided to a single regulator where:

> *'regulation is acquired by the industry and is designed and operated primarily for its benefit.'*[228]

This includes the revolving door problem, where people move between industry and government; and the problem of strategic influence where over time, generations of regulator-firm overlap and interdependencies can shift the regulator closer to the regulated industry, resulting in 'too much' of an incentive to co-operate.[229]

Consider the questionable 'revolving-door' practice where the regulated become the regulator. In 2019 Christian Hawkesby commenced as assistant governor for economics, financial markets and banking. Hawkesby had been part of a team which established Harbour Asset Management, which is owned by Jarden Wealth and Asset Management. [230] [231]

Public understanding of regulatory capture has changed in both scope and influence. Regulatory capture can occur via expertise and/or political lobbying through broader mechanisms which are not necessarily directed to a single regulator. Industry experts can lead, control and shape the design of policy to influence the policy decisions of governments regulatory authorities. In recent years scholars and researchers have drawn attention to the role of corporate industries in influencing nation state

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[227] Dal Bó, E. (2006). Regulatory capture: A review. *Oxford Review of Economic Policy,* 22, 203–225. https://doi.org/10.1093/oxrep/grj013

[228] Stigler, G. J. (1971). The theory of economic regulation. *The Bell Journal of Economics and Management Science*, 2(1), 3. https://doi.org/10.2307/3003160

[229] Dal Bó, E. (2006). Regulatory capture: A review.

[230] Acknowledged in 2022 address: Prior, M. (2022) Our Transformation as a Prudential Regulator. A speech delivered to the Financial Services Council in Auckland on 22 September 2022 Address by Christian Hawkesby, Deputy Governor and General Mananger Financial Stability. https://www.bis.org/review/r220922a.pdf

[231] Business Desk, People Explorer. https://businessdesk.co.nz/people/christian-hawkesby Accessed April 19, 2024.

policy through the supply of expertise, through informational literature, communications and networking processes.[232]

Industry representative groups frequently take steps to develop a policy and informational narrative that reflects and supports their desired trajectory and business aims. Repeated interactions with the regulated industry have been described as cognitive or cultural capture, with the effect that regulators think like the industry. The threat posed by regulatory legislation can dissolve as regulations reflect private sector, rather than public sector interests and values, while industry can point to the legitimacy of the regulations that they 'agree' to.[233]

Industry influence and power has consolidated through globalisation, lobbying and networking, through the supply of private sector services and expertise, and the increasing adoption of private sector values inside governments and the influence of global management consultancy firms. Corporations exercise their political agency through political engagement, institutional participation, and provision and production of resources and services.[234] [235]

Industry funding is used to supply hard infrastructure, including conference and meeting premises to support elite networks and promote collegial relations and ensure access by industry leaders and firms to public officials.[236] However these industry organisations also provide the soft infrastructure – global and domestic thinktanks, communications and policy development researchers to shape political debate.

The consequence is a complex web of influence that extends far beyond the power of individual citizens. This is how stakeholder conversations concerning the adoption of technologies occur at pace behind doors, setting values and principles, language and framing. It's simply business that industries use their resources to secure take-up by nation-states.

Industries will imagine, encourage and incentivise new roles for technology inside governments and then take action to ensure that government policy and resourcing decisions make a space for private industry-developed resources and services. This is good business practice.

John Finch and colleagues have suggested three processes used to stymy environmental regulation: industry groups formulating regulatory principles, operationalising these principles through technical documentation and calculation, and incremental innovation inside industry sectors to address the problems faced by industry regulators.[237]

Scholars argue that such strategies are not separate from the broader operations of industries, but integrated and centrally directed. *'Corporations seek to dominate the information and decision-making*

[232] Saltelli A. et al (2022). Science, the endless frontier of regulatory capture. *Futures* 135:102860 DOI 10.1016/j.futures.2021.102860

[233] Kwak, J. (2013). Cultural capture and the financial crisis. In Daniel Carpenter, & David A. Moss (Eds.), Preventing Regulatory Capture: Special Interest Influence and How to Limit it (Vol. 9781107036, pp. 71–98). Cambridge University Press.

[234] Farnsworth, K; Holden, C (2006) The Business-Social Policy Nexus: Corporate Power and Corporate Inputs into Social Policy. *Journal of social policy*, 35 (3). pp. 473-494. ISSN 0047-279

[235] Lewis N, Baker T, Prince R. (March 13 2023) The real problem is consultants' influence, not their cost. Newsroom. https://newsroom.co.nz/2023/03/13/the-real-problem-is-consultants-influence-not-their-cost/

[236] Scott, J. (1991), Who Rules Britain, *Oxford: Polity Press*.

[237] Finch J et al (2017). Captured by technology? How material agency sustains interaction between regulators and industry actors. *Research Policy* 46 (2017) 160–170, DOI 0.1016/j.respol.2016.08.002

*environments to pursue their interests'*, they achieve this by not merely influencing policy but through the co-creation and delivery of policy. The consequence for governments is that:

> *'governance is a matter not simply of power or struggle but of communication, ideas and ideology.'* [238]

In 2022 Andrea Saltelli and colleagues summarised these processes as a range of tactics used by industry lobbyists to influence the way governments think about scientific and technical knowledge.

Three stages are suggested. Industry agents (lobbyists) influence the methods by which the policy-relevant evidence is produced. They then delegitimise or appropriate the role of the institutional settings which produce the evidence. Through these processes they change the:

> *'the framework or the worldview, to the effect of removing those elements of regulation and evidence which are seen as undesirable by the private interests.'*[239]

Fintech industries, and perhaps even the BIS, can be envisaged as democratic 'erosion agents' who purposefully drive institutional change and hence, the regime transformation. These are actors with agency – Marianne Kneuer considers that they are able to act on three conditions requiring:

> *a) the power to change the rules of the game;*
>
> *b) the intention to change the rules of the game; and*
>
> *c) the ability to organize relevant groups of followers to change the rules of the game.*[240]

Kneuer notes:

> *'erosion agents try to fly below the radar as long as possible – they avoid hard and open repression of citizens as well as the massive limitation of political rights, instead relying more on loopholes, selective and event-driven measures, and subtle control.'*[241]

Where stakeholder consultation has taken place it has been secretive and confined. With regards to Digital ID and CBDC policies the principles and frameworks might be claimed to arise from 'stakeholder consultation'. The DIA and RBNZ have intensively engaged in stakeholder consultation with small groups of stakeholders that appear to disproportionately contain industry actors and marginalised communities while being unavailable to the general public.[242] [243] They've then created principles that

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[238] Miller D. and Harkins C. (2010). Corporate strategy, corporate capture: Food and alcohol industry lobbying and public health. *Critical Social Policy,* 0261-0183 101; Vol. 30(4): 564–589;376805. P.582 DOI: 10.1177/0261018310376805

[239] Saltelli A. et al (2022). Science, the endless frontier of regulatory capture. Page 9.

[240] Kneuer, M. (2021). "Unravelling democratic erosion: Who drives the slow death of democracy, and how?" Democratization 28(8), 1442-1462 [Abstr. 72.1651].

[241] Kneuer, M. (2023). Trends on Democratic Erosion: The Role Of Agency And Sequencing. *International Political Science* Abstracts, 73(6), 837-847. Page 845. https://doi.org/10.1177/00208345231218076

[242] Department of Internal Affairs. Regulatory Impact Statement: Additional policy decisions for the Digital Identity Services Trust Framework Bill https://www.dia.govt.nz/diawebsite.nsf/Files/detailed-policy-for-the-digital-identity-trust-framework/$file/RIS-Additional-policy-decisions-for-the-Digital-Identity-Services-Trust-Framework.pdf

[243] RBNZ CDC Forum Members. https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/oias/2024/oia2324-050-part4-information-about-the-cbdc-stakeholder-engagement-forum.pdf

reflect the stakeholder engagement, but which also mirror industry derived principles[244]. Industry groups often lead by establishing principles that are then adopted by nation states, as is discussed below.

However, as discussed, stakeholder consultations for the Digital Identity Services Trust Framework Bill (which sets up a governance framework for the corporations that use digital identity or provide technical services) broadly excluded the general public. The government framed Digital ID stakeholders as the public agencies who would have oversight over the greater digital infrastructure, the private sector industries who would supply the Digital ID technologies and services, and a minor group representing Māori interests.

The Digital ID framework policy-framing and legislation, and the April 2024 CBDC white papers mirror priorities, pre-prepared principles and discursive narratives already preprepared in white papers prepared by the Central banks, transnational consultancy firms and industry-funded non-government organisations.

I suggest that the cultural capture has resulted in a necessary achievement. Prima facie, it is not Parliament or The Treasury that appear to have responsibility for deciding whether the RBNZ should issue a digital currency – it is the RBNZ appear to have granted themselves this power, through their control of framing, risk assessment and discourse. The institutional setting has been appropriated.

These tactics, by directly targeting the societal functions of science, have effectively reshaped the social, ethical and cultural attitudes to policy making in favour of the Fintech industries and agencies who favour greater surveillance of citizens.[245]

Saltelli et al (2022) describe this as a two-pronged approach:

> *'The first prong is a substitution of collusive activities, by removing the traditional separation between regulators and regulated. This process is built on 'institutional carriers' such as official statements and normative and ethical principles, stated by document agreed upon by different stakeholders. This allows for a formally neutral and legitimate conduit of industrial interests.'*

Once these processes are in place, the regulator and regulated relationship is supplanted by a relationship of mutual support and through this process the governments' values are captured and reframed -

> *'The second prong is a process of reframing and rescaling values and the vision of the relationship among science, society and politics.'*

Government discourse around 'inclusion', previously discussed, imitates the broader, global messaging, and fails to appreciate the perspective indigenous populations might have if they were asked to consider the harsh reality of increased control through Digital IDs and CBDC ledger technologies, of panopticon-like surveillance.

The global Fintech industry have embedded themselves in domestic surveillance and banking policy through their leadership in the development of Digital IDs and CBDC policy and infrastructure. It's easy to be unaware of, and dismiss, the long-term collegiality; overlapping relationships; and ongoing

[244] Bank for International Settlements (2020) Central bank digital currencies: foundational principles and core features. Report no 1 in a series of collaborations from a group of central banks. https://www.bis.org/publ/othp33.pdf

[245] Saltelli A. et al (2022). Science, the endless frontier of regulatory capture. Page 9.

crosstalk that has occurred for years between the World Economic Forum and the Bank for International Settlements[246], and the International Monetary Fund[247]. The World Economic Forum:

> *'is mostly funded by its 1,000 member multi-national companies.*[248]

Then there are the 'top 100 strategic partners' of the World Economic Forum (WEF), which include the dominant players in the Fintech system and all of the major consultancy firms that governments habitually bring in to government agencies to develop policy and oversee campaigns. The mission of the WEF states:

> *'The World Economic Forum is the International Organization for Public-Private Cooperation. It provides a global, impartial and not-for-profit platform for meaningful connection between stakeholders to establish trust, and build initiatives for cooperation and progress.*
>
> *In a world marked by complex challenges, the World Economic Forum engages political, business, academic, civil society and other leaders of society to shape global, regional and industry agendas.'*

These WEF Strategic Partners are corporations, not governments, and they:

> *'believe in the power of collaboration to drive positive change, and work closely with the World Economic Forum to help shape industry, regional and global agendas'.* [249]

The Fintech sector and the individuals in the DIA and RBNZ who are dedicated to locking policies and law in place have another advantage. The technologies involved in Digital IDs and CBDCs are so new that they are not well-studied. Therefore, the political ramifications are not well known. The potential to undermine human, civil and constitutional rights have not been fleshed out by constitutional and administrative law experts.

The Fintech sector, the government actors who are committed to the policy, and the global management consultancies who network across government, Fintech and the World Economic Forum stand to benefit from the novelty of this process. It's not surprising then, that as their power and influence is growing and as governance arrangements in favour of greater Fintech power are advancing at pace, trust in the tech sector is commensurately declining at pace.[250]

It is difficult not to see that the RBNZ, together with its policy co-developer Accenture, are conflicted, and unable to stand back and consider the broader digital ecosystem with any impartiality, and the policy documents suggest this.

Backing out of CBDC issuing powers may be extraordinarily difficult, as Central banks and the huge Fintech industry will use their financial and political influence to prevent what they would view as inappropriate regulation. Once policies and legislation are in place, if public opinion, or the social and scientific literature start to express concern about risk that might result in regulation, a large body of literature demonstrates that industry sectors double-down and invest in product defence.

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[246] World Economic Forum. Search. https://www.weforum.org/search/?query=bank+of+international+settlements
[247] World Economic Forum. Search https://www.weforum.org/search/?query=international+monetary+fund
[248] Wikipedia. https://en.wikipedia.org/wiki/World_Economic_Forum
[249] WEF. Strategic Partners. https://www.weforum.org/communities/strategic-partnership-b5337725-fac7-4f8a-9a4f-c89072b96a0d/
[250] Edelmans Trust Barometer. Trust in Tech Sector 2012-2021. https://www.edelman.com/trust/2021-trust-barometer/trust-technology

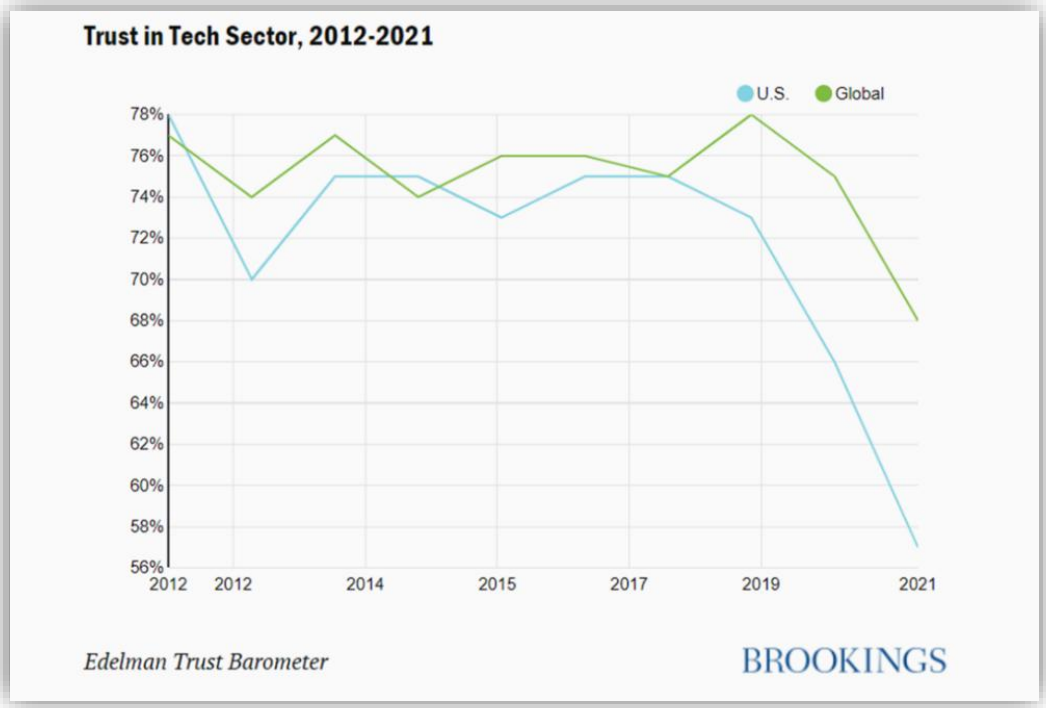



**Figure 14 Edelmans Trust Barometer. Trust in Tech Sector 2012-2021.**

RBNZ's already close relationship with Accenture suggest that if negative or worrying information is revealed as CBDC infrastructure develops, that the RBNZ will be reluctant to step back. The RBNZ may be so immersed in BIS and Fintech culture, it may struggle to consider the problem from a constitutional or public interest perspective.

Dr David Michaels, Professor at George Washington University, has described industry's legacy not as a product, but rather, the legacy is based on the success in maintaining public belief, and hence regulatory concern, on how safe or effective a product. Industries legacy is in product *defence*.

Dr David Michaels, former head of the U.S. workplace regulator, the Occupational Safety and Health Administration considers that product defence distorts the capacity for governments to act in the best interests of the public.

> *'The basic principle of the regulatory system holds that decisions must be made on the basis of the best evidence available at the time. Product defense science doesn't just game our free-market system; it prevents our government from accomplishing one of the reasons for its very existence. It is often unrecognised because it is so ingrained in our understanding that a primary government function is to facilitate some individuals (including the owners of corporations) to benefit by producing or performing something that does not impinge on the freedom and well-being of other individuals... We want stronger regulations not because we don't care about freedom, but because we cannot be free without the states protection from harm.'*[251]

Constitutional and administrative law and human rights experts, for example, who might consider the broader infrastructure of overlapping Digital ID-CBDC relations, and the implications for the public, were not included in stakeholder conversations, and certainly haven't drafted any publications which suggest they have had access and insight into these frameworks, and the legislation that supports the regulations.

[251] Michaels, D. (2020). The Triumph of Doubt. Oxford University Press. P.271

The effect has been to move governance models to more broadly reflect private sector values of innovation and efficiency, altering the political agency of Western governments. Academic institutions have reflected this priority change (the neoliberal turn) following government shifts in policy and research funding trajectories.[252] This has created information asymmetries, reducing the pool of public law, social science and ethics experts that might critically analyse the implications of close government relations, regulatory capture and the implications for representative democracies. The informational gap has increased the potential for governments to lean on industry expertise.

## 9. AS A SOCIETY ARE WE UNINFORMED ABOUT FISCAL POLICY & DEFICIT SPENDING?

**The close relationship of democracy with the power of money creation is underappreciated.**

The broader population – and even the courts – may under appreciate the role of budgetary appropriations in supporting social, economic, environmental and educational goals via fiscal policy.

The government is sovereign, with powers to tax and to issue money. The Minister of Finance is the Minister Responsible for the Treasury. The Treasury operationalises fiscal policy through government spending and taxation with the Minister of Finance.

The main financial risks to which the Reserve Bank is exposed includes foreign exchange risks, liquidity risks and financial stability risks, [253] i.e. the RBNZ cannot 'go broke'.

In 1971 the United States abandoned the convertibility of the US dollar to gold (gold-exchange standard), which had been in place since the 1944 Bretton Woods agreement. The US dollar became a fiat currency. New Zealand had already abandoned convertibility in the 1930s.[254]

Stimulus approaches are possible because central banks cannot become insolvent:

> *'Unlike commercial banks, central banks do not seek profits, cannot be insolvent in the conventional sense as they can, in principle, issue more currency to meet domestic currency obligations, and face no regulatory capital minima precisely because of their unique purpose.... These provisions allow central banks to successfully operate without capital and withstand extended periods of losses and negative equity'.*[255]

Digital currencies are mostly created domestically through public and private mechanisms. The parliamentary appropriations (Budget) process which injects money into the economy through the

[252] Bruning J. (2021) Innovation and Ignorance: How Innovation Funding Cultures Disincentivise Endocrine Disruption Research. Thesis. Master of Arts (Sociology). University of Auckland. https://researchspace.auckland.ac.nz/handle/2292/57929

[253] New Zealand Government (October 2023) The Financial Statements of the Government of New Zealand for the year ended 30 June 2023 https://www.treasury.govt.nz/sites/default/files/2023-10/fsgnz-2023.pdf

[254] Mathews, K. (2003) The legal history of money in New Zealand, Reserve Bank of New Zealand. Bulletin 6:1 https://www.rbnz.govt.nz/-/media/project/sites/rbnz/files/publications/bulletins/2003/2003mar66-1matthews.pdf

[255] Bell S et al (2023). Why are central banks reporting losses? Does it matter? *Bank for International Settlements.* BIS Bulletin No 68. 7 February 2023

purchases of goods and services from the private sector; through transfer payments (as benefits); funding of infrastructure; research; public servant salaries and large projects. [256] [257]

We are used to the public drama of running a deficit. Deficit spending politics leaves government staff and the general public unaware that a deficit is simply the difference between taxing and spending over time. This is very different from offshore debt.

Following the Great Depression, governments created stimulus packages via the appropriations process, including to develop state owned enterprises and state housing. Today the New Zealand government more closely follows an austerity approach.

Currencies are also created when domestically trading private sector banks purchase securities (colloquially known as a loan) from companies or individuals – or to put it another way - banks create liabilities that become private money. The record of the banks' debt (referred to as a bank deposit) is lodged into the account of the transaction as an accounts payable liability. Public savings stored digitally (as perhaps 20% of the asset) will be transferred digitally, and the bank will create the further 80% of the asset price using this process.[258]

Deficit spending as a harmful event is misleading, if the deficit spending promotes social, economic, environmental and educational goals and improves productivity, this is good. Deficit spending dramatics downplay the fact that there are 'no intrinsic 'financial constraints that are imposed on a currency-issuing government.'[259]

The powers to use fiscal policy are in place to pursue a public purpose, including the wellbeing of society. With such powers, governments create large public-good infrastructure schemes; implement health-protective policies; improve education; support the courts and policing; and supplement local government assets and infrastructure. Governments can freely fund independent public research and science facilities to monitor and understand the impacts of economic, health, education (and so on) policies, and independently feedback information so as to improve the functions of the machinery of government.

PSGRNZ draw attention to these issues because the RBNZ is promising to reduce financial inequities in their CBDC campaign. The RBNZ may unfortunately benefit from an historic failure to communicate to the public how fiscal policy can be used to reduce inequities through the public ownership of common assets and public provision of common services. In the austerity culture, it seems natural to grant the powers of a Central bank to create money outside the Appropriations process will help mitigate the decline in the average quality of life for New Zealand people.

PSGRNZ consider this is misleading. Increasing private ownership of essential goods and services, and related pricing pressures, and the decline of health and education will not be stemmed by instrumental promises by a Central bank that would secure power outside parliamentary scrutiny.

Forty years of 'hands off' regulation has steered policy to favour large offshore industries, producing perverse inflationary shifts that would have been tempered through more circumspect fiscal policy. House price increases have not only been driven by high immigration and failure to stem foreign

[256] Mitchel W et al (2019). Macroeconomics. MacMillan International & Red Globe Press.
[257] Kelton, S. (2020). The Deficit Myth: Modern Monetary Theory and How to Build a Better Economy. John Murray Publishers Ltd. See also, the Finding the Money film. FindingMoneyFilm.com
[258] Werner, Richard A., 2014. "Can banks individually create money out of nothing? — The theories and the empirical evidence," International Review of Financial Analysis, Elsevier, vol. 36(C), pages 1-19.
[259] Mitchell W. et al (2019). Macroeconomics. *McMillan International*.

ownership; but from opportunistic rentier landlords with greater equity than first home buyers. Prices are likely to be sustained as private equity firms step in, rather than by fiscal policy to assist first home buyers. Private sector ownership by a small group of companies of energy and communications assets and the need to sustain profit margins, inevitably produce either price rises or government bail-outs (or soft regulation) to ensure the sector is viable for the private owner. Population growth has outpaced local council budgets for infrastructure development and maintenance, inflating rates. Funding for, for example upgrades of drinking water and waste-water could be easily provided through the Appropriations process, instead of the government attempting to semi-privatise the sector.

Houses have not been built. Policies to control house prices, could be enacted, while the government could use the appropriations process (fiscal policy) to finance regional infrastructure development to keep rates low and develop state owned enterprise in regional areas to train disenfranchised young people, for example, to build innovative, portable public houses. This has not happened. Because society and most public sector staff are ignorant of the power of fiscal policy, the public imagination is blinkered.

The general impression is that fiscal policy will lead to greater inflation, but this is not necessarily true.[260]

Without local stimulus, the continuance of austerity policy platforms, the privatisation of infrastructure and services in industries with few players and transfer of New Zealand assets and businesses (including services) and profits offshore; the increasing barriers small and medium-sized businesses face in both securing finance and navigating regulatory barriers; produces, over the longer time-frame, in a fragile economy.

The turning away from public-good spending has resulted in profit-seeking for global investors. A failure to apply fiscal policy has led to much greater offshore ownership of New Zealand assets and businesses.

The increased offshore ownership of domestic assets including services; the offshoring of services; the consolidation of power in larger institutions; and the transfer of wealth outside New Zealand has left the public poorer and sicker. When offshore companies control essential services with few players, and increase prices because they must make a profit, how is this beneficial for the public purpose?

## HOW RBNZ IMPACTS MOST MONEY CREATION: OVERNIGHT INTEREST RATE CHARGES

Appreciating how overnight interest rate charges – the Official Cash Rate (OCR) works, might help shed light on potential implications, should the RBNZ have power to both adjust the OCR, and make loans as a retail currency in similar fashion to a retail bank. Of course, digital currency has been in place since the banking sector commenced digitising transactions.

Historically central banks powers encompassed interest rate liquidity management (monetary policy), via the setting of overnight (interbank) interest rates (overnight interest rate charges – the OCR) and through the setting of reserve availability levels. This was in place to sustain desired target inflation levels, keeping Consumer Price Index (CPI) inflation to between 2-3%.

[260] Mitchel W et al (2019). Macroeconomics. MacMillan International & Red Globe Press.

Banks hold reserve balances with the Central bank to enable interbank payments (bank-to-bank transfers) to take place. If a banks reserve balance is too low for the interbank payment, they will first attempt to borrow from other banks with excess reserves. If banks hold insufficient reserves they cannot transfer funds – so they cannot expand credit (make loans).

Central banks directly influence the potential for banks to expand credit by managing liquidity, such as injecting more reserves into the system. Central banks do not loan out reserves, rather, they set the level of reserves (inside the banking system).

In addition, the overnight-interbank rate, set by Central banks, determines wholesale interest rates which are the rate used to 'purchase' reserves. Note, the bank does not 'own' the reserves held with the Central bank, the wholesale rate acts more like funding permission to secure capacity for a transaction to take place, similar to use of a service (which can be restricted in inflationary cycles).

# 10. DISCUSSION: CONFLICTS OF INTEREST THAT ARISE

*PRINCIPLE 1 - CBDCS SHOULD 'DO NO HARM'*[261]

*'democracy's intrinsic institutional complexity makes it structurally vulnerable to endogenously driven decline'*[262]

This principle established by Central banks, contains a caveat- only CBDCs should not hinder a central bank's ability to meet its monetary and financial stability objectives. There's no promise that other forms of harm might occur, such as the abuse of power and a chilling effect on our rights and freedoms.

CBCDs do not need to be hurried along. A minimum moratorium of six years, (at least two general election cycles), at least to 2030, should be placed on any CBDC trial project until New Zealand can observe and understand both the experiences of the technology and how people and groups are impacted by that technology.

As we have discussed, the power to decide to issue CBDCs should not lie with the RBNZ but with Parliament or the people, in the form of a referendum. At the time of writing the U.S. House of Representatives had passed the CBDC Anti-Surveillance State Act.[263] It is now waiting to move through the Senate. That Act amends Section 13 of the Federal Reserve Act by adding at the end the following new paragraph: [264]

> *"(15) Except as specifically authorized under this Act, a Federal reserve bank may not offer products or services directly to an individual, maintain an account on behalf of an individual, or issue a central bank digital currency directly to an individual.".*

[261] Bank for International Settlements (2020) Central bank digital currencies: foundational principles and core features. Report no 1 in a series of collaborations from a group of central banks. https://www.bis.org/publ/othp33.pdf

[262] Ding, Iza and Dan Slater. "Democratic decoupling." Democratization 28 (2021): 63 - 80.

[263] Halaschek Z (May 23, 2024) House Republicans pass bill to block central bank digital currency. *Washington Examiner*. https://www.washingtonexaminer.com/policy/finance-and-economy/3012135/house-republicans-pass-bill-to-block-central-bank-digital-currency/

[264] Rep. Emmer, Tom [R-MN-6] (Introduced 02/21/2023) CBDC Anti-Surveillance State Act https://www.congress.gov/bill/118th-congress/house-bill/1122/text

Monetary sovereignty is not a key task for the RBNZ, and cash can be maintained. Trust in the stewardship of financial markets is a far more important task. A five-year moratorium can be placed on the retail CBDC trial project and further public consultations, while New Zealand watches how foreign jurisdictions are impacted.

Advances in programmability present a novel opportunity for Central banks. From the ledger and API technology, to the account and/or token technology, to the programmable, self-executing applications (the smart contracts). 'Composability', the bundling of automated transactions provides the opportunity to target groups. CBDCs will not be accessible without a Digital ID, and the infrastructure will be inter-operational.

PSGRNZ considers these technologies in the hands of Central banks, and the problem of delegation of authority to global institutions that include the Bank for International Settlements, presents four extraordinary risks to democracy. PSGRNZ believe there are 10 reasons why people should be concerned.

Democratic erosion can occur when political rights and freedoms are curtailed. Measures can be enacted in an incremental, subtle and legalistic way. In complex systems, tipping points where systems (including democratic) fall into disarray and chaos are rarely obvious.

> *'The perfidious nature of democratic erosion lies in a piecemeal process that is barely visible. Each individual step seems marginal and not fundamentally threatening to democracy, and the full picture is only perceived over time.'*[265]

## FOUR DEMOCRATIC RISKS

1. The first risk concerns the planned coupling of digital IDs to retail CBDCs, enhancing all-of-government oversight over private activity. The privacy concerns do not just extend to private business access to public information, but government surveillance of public activities.
2. The second risk relates to the programmability of CBDCs that will be tied to a persons' Digital ID. This might best be described as a form of entrapment. Current private bank digital currencies, paid to society as benefits and wages are not programmable, they are not toggled to permissions, nor restricted to use in a specific geographic areas. Nor are they revokable. They cannot be deleted.
3. The third risk concerns the potential for abuse of power with a shift away from parliamentary oversight. Money creation through the budgetary process is the result of the combined activities of government Ministers, department heads, public sector staff and public lobbying. Private bank money creation through loans is a consequence of political decision-making. Reserve bank power to create or release CBDCs would be outside of these processes.
4. The fourth risk relates to the power and influence of the International Monetary Fund and the Bank for International Settlements. They lead global policy on CBDCs; and are commensurately, neatly situated to take advantage of a power shift in favour of Central

[265] Kneuer, M. (2023). Trends on Democratic Erosion: The Role Of Agency And Sequencing. *International Political Science*

banks. They may exploit access to public information on globally networked, unified ledgers.

## TEN PATHWAYS HARM MIGHT OCCUR

### 1) Adding another hat to the RBNZ's role could well be a recipe for democratic disaster.

Parliamentarians must have access to public-sector (non-RBNZ) legal advice from experts in constitutional and administrative law. This advice can review the greater uncertainties, including the potential conflicts of interest if the RBNZ extend their role beyond existing responsibilities and secures the powers to release retail CBDCs.

The RBNZ already has greater responsibilities than most banks. Most New Zealanders are unaware of the extent and breadth of these reforms. Central bank oversight of monetary policy, and their control over the interbank payments system through setting interbank (wholesale) interest rates and the available reserve levels in the banking system positions Central banks as effective regulators of the global banking payments system through their control over liquidity.

There is considerable likelihood, if Central banks including the RBNZ took on a greater interventionist (political) role, that the bureaucracy of the Central bank would grow to reflect these demands. In effect, there would be a shift in power of decision-making from democratically accountable agencies to an institution that is conventionally far less accountable on a day-to-day basis, to Parliament and citizens. In essence, out of the frying pan and into the fire.

If Central banks, including the Reserve Bank of New Zealand were to engage in retail markets, because of their power to release CBDCs, the effect may not only fundamentally disrupt the balance of power between central and private banks; the increased powers *prima facie* present an extraordinary conflict of interest.

### 2) Who would regulate CBDC issuing Central banks, including the RBNZ?

Central bank dependence on large global institutions, whose power has expanded post WWII, and which include the International Monetary Fund and the Bank for International Settlements, must be re-examined with a constitutional and public law lens. If Central banks ratchet into a unified ledger network at scale and pace, it is likely that substantial power would shift to the Bank for International Settlements, the Central bank's 'bank', with a role for the International Monetary Fund. These institutions hold extensive legal immunities and privileges. It is unlikely that domestic judicial process would hold sway in a disagreement over jurisdiction, or risk or harm.

### 3) Early adopters of new technologies are not well placed to assess long-term, unanticipated and off-target risk.

It's evident that the BIS and partner banks continue to theorise on the potential of CBDCs and run tests to confirm those theories; and that the RBNZ have downplayed the potential of smart contracts. Deploying a technology, before the risks have been thoroughly parsed in the public interest, is not unusual, but it is not good governance. Historically, concern relating to technologies been around the long-term health impacts of their use. Organisations make the most of the low barriers, which are in place because of deep scientific, ethical, cultural, social

and economic ignorance concerning the long-term chronic effects, often not easily anticipated, of the technology in question. Industry sectors make the most of ignorance (including a deficit of local research) to secure their product in the market. Vaping in New Zealand is an example of such a strategy. However, as we have discussed, the risks concern not just health, but human autonomy and free will.

**4) Policy and legislation can end up being a Trojan horse for industry interests.**

Dominant players with the greatest expertise will have the most influence in 'harmonising' compliance-related processes and shaping how risk is communicated. Historically these are industry figures. Development of key principles often occurs outside public fora and are noteworthy for what they don't include (human rights) as to what they address (privacy arrangements with corporations but not nation states).

RBNZ policies and Digital ID legislation contain all the ingredients of regulatory capture. It seems that the intensive policy work undertaken by the BIS, the IMF and the WEF and their top global management consultancies have deeply influenced the way policies and risks are considered by the RBNZ.

Without evidence to the contrary, the RBNZ and DIA appear to be laundering WEF and BIS policies in a democratic country without the oversight of domestic agents with the competence or expertise to contest their claims. The RBNZ is historically positioned as an impartial actor yet is drawing from the industry playbook to claim why CBDCs are necessary.

Unfortunately, following the breakdown of public resourcing for public universities, academic freedom in New Zealand has collapsed. RBNZ are operating in an environment where independent, outside experts are under-resourced, and unlikely to volunteer high-calibre expertise that might point to potential long-term harms. In such an environment, it is not surprising that RBNZ and DIA staff are vulnerable to the persuasive influence of powerful external actors and therefore problematise issues through an industry lens rather than a longer-term lens, which places principles of constitutional and public law at the heart of decision-making.

**5) RBNZ claim rules will be transparent, but smart contracts will be secret.**

There is no doubt that secrecy, as confidentiality, will pervade the entire smart contract ecosystem. The arrangements relating to CBDCs will exhibit many of the characteristics of regulation of innovations classed as hazards or risks. In chemicals regulation the scientific studies that are supplied to chemicals regulators are kept secret and the commercial chemical formulations are keep secret via commercial in confidence agreements.

- The officials who decide who is targeted for particular actions will be anonymous.
- The values that will underpin who and what executable contracts are deployed will be wrapped up in confidential decision-making processes.
- The technologies that drive the executable contracts will be confidential.
- The decisions relating to identifiability in the entire blockchain will be murky.
- Back-end access will be enabled by emergency or crisis legislation for which the extent of emergency is subjective.

- The agreements with corporations relating to responsibilities around CBDCs and smart contracts will be hidden by commercial in confidence agreements.

### 6) The combined power of Digital IDs and Programmable CBDCs are not considered.

Once technologies are released, it's difficult to put the genie back in the bottle. Withdrawing the product is then difficult, and industry sectors spend an enormous amount of money working to manufacture consent and sustain uncertainty to prevent governments regulating or demanding that a product is withdrawn.

A recent release by the U.S. government demonstrates an intention of that government to develop a sweeping cybersecurity ecosystem that is entirely co-produced and co-managed by the private and public sector in partnership. It must be considered in context. The potential for control is enabled at scale and pace by Digital ID-CBDC inter-operability. This document must be appraised with an eye on the human rights and freedoms that can be impacted by the inter-operability of these systems. Such inter-operability, which will ultimately be centralised due to government oversight, produces an effect akin to a control grid.




**Figure 15 (2022) A Primer on the Role of the World Bank and Global Networks in Promoting Digital ID. Digital Welfare State and Human Rights Project. Center for Human Rights and Global Justice. NYU School of Law**

The U.S. document is an open-ended control list, and lacks any expression of an intention to protection of human rights and freedoms. Without rights and obligations embedded in the document as overarching principles, this document resembles a recipe for fascism.[266]

The major law changes enhancing the power of the RBNZ were undertaken in the midst of the COVID-19 pandemic with little media coverage regarding the specific law changes, and consequently, little public participation in the parliamentary and Select Committee processes.

Chemicals regulators persistently refrain from requiring companies to disclose the full commercial chemical formulations that enhance an active ingredient in that formulation, and fail to take into account the full toxicity of a chemical formulation. When new evidence emerges showing that the full formulation is riskier than previously thought, regulators do not generally pivot to consider the new evidence. Regulators resist through silence on an issue, or by claiming that the evidence isn't legitimate; and/or that they are only responsible for one ingredient in the formulation, and that other claims lack certainty.

Such problems can already be seen to occur with Digital ID and CBDC governance arrangements. Government processes, including through regulatory impact analyses, introducing Digital IDs and CBDCs have been siloed, and governments have failed to reflect on their inter-operability. As with a chemical formulation, there will be anticipated interactions or synergies, that have potential for harm.

**7) Overarching policies and legislation have left out democratic values and principles.**

This is a consequence of the development of policies and principles in non-government agencies. The BIS, IMF, RBNZ, and European Central Bank papers do not clarify the role of democratic parliaments in deciding how the powers of the Central banks to create digital sovereign money will be stewarded. Claims of inclusivity are not a substitute for deep policy thinking about whether the effect of interconnecting policies have the capacity to undermine human, civil or constitutional rights. As is the case, the agency who wants the policy or legislation, contracts the global management consultancy with the most expertise, crafts the policy, designs the risk framework, secures the stakeholder consultations, and publishes the Regulatory Impact Statement. It's then put to Parliament, which, in ignorance of the issues that the agency *does not* want to address, then passes the legislation.

From the narrative in the RBNZ campaign papers, the intention to bypass parliamentary and ethics-based oversight. Privacy in relation to retail transactions is emphasised, while downplaying the increased oversight (as traceability) by the networked Central banks and their governments on citizens, is downplayed. Broad-based oversight (including surveillance) is central to carrying out the intended functions, including the inception and design of smart contracts.

**8) Human rights have not been taken into consideration.**

[266] White House (May 2024) National Cybersecurity Strategy Implementation Plan. Version 2. https://www.whitehouse.gov/wp-content/uploads/2024/05/National-Cybersecurity-Strategy-Implementation-Plan-Version-2.pdf

Smart contracts which can be remotely deployed, and deployed to impact targeted groups, can potentially be abused.

- The potential for introduction of artificial intelligence to introduce discrete values that perpetuate abuses into programming functions.
- Opaque environments that enable discrete changes without public knowledge.
- The potential for the networked effect and the composability of these technologies to perpetuate harm at scale.

**There is a real potential for entrapment –** where the public face increasing surveillance of their behaviour, and the potential for programmes to reduce autonomy and free will. This might not occur immediately, but through subtle policy and regulatory shifts, could easily be in place by 2030, when a broad swathe of the population might have Digital IDs and RBNZ CBDC accounts.

The Australian experience with cashless cards that were intended to direct the behaviour of indigenous Australians shows how easily bureaucratic processes can increase administration while undermining autonomy and free will.

The RBNZ makes the distinction that *payments* will be programmable, rather than the money. Such distinctions are vulnerable to regulatory sleights of hand and urgency claims. For example, might this permit a negative transfer (payment) that drains an account, or a halt on programmed transfer of income (either through employment or via government benefit). In addition, the relative ease of passing secondary legislation, and the increasing passing of legislation under urgency provides little assurance that such a promise would stand (be honoured) over the coming decades.

9) **There are extraordinary questions of constitutional and administrative law that must be addressed in public fora.**

This includes a complete assessment of the public law implications of the delegation of powers to Central banks and the implications of smart contracts (pieces of code) that enable conditional use between two or three parties.

There is no evidence that legal experts outside of the RBNZ with expertise in administrative and constitutional law, have assessed the legality of the bank regulator taking on such powers. In addition, when all the facts are understood, there is no evidence to show that granting Central banks power to operate in retail environments is inherently reasonable. The same can be said for transference of such powers outside of parliamentary oversight – which include the use of smart contracts, which appear to be designed into platforms. These might have potential to affect a persons rights, obligations and interests protected or recognised by law – including human rights.

There is a lack of analysis and comment from the public sector on the political, legal and social implications of the RBNZ's multi-stage process, and of the bank regulator taking on such powers. Searches on university websites and on Google scholar confirm domestic research in this area is lacking. In addition, a fifty-year shift away from using fiscal policy, in combination with little understanding of what a fiscal deficit factually entails, will make it difficult for RBNZ outsiders to look critically at Central bank claims around financial inclusion.

10) **Decades of ignorance relating to fiscal policy has created a perfect storm for Central banks.**

The current RBNZ campaign deserves to be understood in a broader political, legal and democratic context. Prior to the post-war period, governments drew upon fiscal policy to prevent public debt, by ensuring that publicly owned and funded infrastructure and services would enable the optimum functioning of society. When health, education, roading, and public utilities were publicly owned, and public housing could be supplied to the poorest groups, costs could be kept manageable, providing everyone with a chance of growing up healthy and educated, with the ability to contribute to society.

There has been little independent enquiry exploring whether the RBNZ reforms will create added layers of bureaucracy that create barriers to small and medium-sized banks. A thriving private bank industry with a range of small, medium and large banks is associated with economic development and innovation. Small banks are more likely to loan to small business.[267] In the past five decades regulation and take-overs have resulted in a shrunken market. Whilst there are 27 registered banks operating, and with only four Australian-owned banks responsible for 85% of bank lending. New Zealand-owned banks accounting for just 9% of lending.[268]

Regulatory controls can work in favour of the big banks. Kiwibank has expressed concern to the Deposit Takers Bill Select Committee that the Deposit Takers Act would not give smaller entities sufficient time to adjust to a new regulatory regime, and would not place undue compliance burdens on smaller Deposit Takers.[269]

Austerity mindsets in government have resulted in a reluctance to use the Budgetary process to put long-term funding in place that will support and enhance health, education, the financing of key local government infrastructure (such as water and sewerage), and reduce funding and administrative barriers for small and medium-sized businesses.

Central bank's mooted shift to digital cash or CBDCs represents the biggest change in money since 1971, when the US dollar was taken off the gold standard. Ironically, the Central banks are waging this campaign following four years of extraordinary digital money-printing by Governments and their Central banks.

It is a little eye-raising that the RBNZ would select a recession[270] to implement CBDCs. It seems that in a current 'crisis' people might be misled to believe that it is in the power of the RBNZ to make political decisions that might reduce inequality. This is not, and never has been, the role of the RBNZ.

### A final word.

As we have demonstrated, too often the policies and legislation that is crafted reflect the language and values of the transnational institutions that develop the policy in the first place. In New Zealand

[267] Mkhaiber A and Werner RA (2021) The relationship between bank size and the propensity to lend to small firms: New empirical evidence from a large sample. Journal of International Money and Finance, 110:102281. DOI: 10.1016/j.jimonfin.2020.102281

[268] Reserve Bank of New Zealand. The banking sector. May 2022. https://www.rbnz.govt.nz/financial-stability/about-the-new-zealand-financial-system/the-banking-sector *Accessed April 18, 2024.*

[269] Kiwibank submission to the Finance and Expenditure Committee on the Deposit Takers Bill (Bill no.162-1). https://www.parliament.nz/resource/en-NZ/53SCFE_EVI_127184_FE11400/8018b093826b43f3d4371255e8469239a7a6b9a3

[270] Beckford, G. (2024, 21 March) New Zealand is in a recession: What you need to know. RNZ. https://www.rnz.co.nz/news/national/512347/new-zealand-is-in-a-recession-what-you-need-to-know

legislation is increasingly designed to be released without public consultation. When government departments do consult publicly, as we see in regards to CBDCs and Digital IDs, there is evidence that they overly depend on the same management consultancies who have formulated policy with the Fintech sector to formulate nation state policy. Government agencies then compartmentalise different elements of what is intended to become a greater digital infrastructure. Select Committees then fail to address public concerns relating to rights and the networked effect of the separately legislated entities, and forward draft legislation to Parliament to pass the laws anyway.

In such a world where technology enables policy implementation swiftly and without public oversight, it might not only be free-will that erodes – the constitutional checks and balances that place checks on executive power could be eroded too. In this world, the prevention of the exercise of arbitrary power may be difficult.

PSGRNZ emphasises that innovation and advancements in global non-Central bank financial markets infrastructure design, including advances in the coordination (and networking) of global financial and retail markets using, for example, unified ledger technology which might create greater efficiencies in terms of faster transaction times at low cost in commercial retail and wholesale sectors – is a completely separate issue - from any policies relating to retail CBDC issuance.

It seems that public servants already have little choice *not* to acquiesce to a Digital ID, which involves the supply of their own biometric data. As we have discussed, Digital IDs should not be compulsory.

It is rather simple, given the failure of DIA and RBNZ policy papers to consider how human, civil and constitutional rights might be undermined, to imagine the following passage, albeit updated, drafted in a white paper or presented in a global forum. Predictive digital networks where AI supports decision-making and remote decisions where secretive smart contracts are designed to achieve political ends:

> *'anticipate[s] the solution of certain universal problems which have been raised elsewhere, in the political field by the splitting up of parties, the usurpation of power by parliaments, the irresponsibility of assemblies; in the economic field by the increasingly numerous and important functions discharged by trade unions and trade associations with their disputes and ententes, affecting both capital and labor; in the ethical field by the need felt for order, discipline, obedience to the moral dictates of patriotism."*[271]

The current RBNZ campaign invites us to take a step back from the programmable ledger and consider how, in the long-term, human, civil and constitutional rights could be eroded by these inter-operable platforms.

It is our hope that this paper will promote wider discussion amongst the New Zealand public on the powers of Parliament to use and apply fiscal policy as a public good. This extends beyond the funding of health and education, and the resourcing of public infrastructure, to the unshackling of universities and research institutions so that they may have independence and freedom to research and shed light on politically contested issues that are currently out of scope because they threaten vested interests, which include commercial partners. Democracies can only function if disciplinary experts have the power and freedom to speak up, even if an issue is polarising or politically challenging.

PSGRNZ urge that we do not default to delegate powers of retail CBDC money creation to a group of Central bank bureaucrats who absolutely understand that Digital IDs and CBDCs will be toggled together. PSGRNZ hope that this paper may assist the public of New Zealand to raise our collective

[271] Mussolini B. (1932) The Doctrine of Fascism. https://sjsu.edu/faculty/wooda/2B-HUM/Readings/The-Doctrine-of-Fascism.pdf

eyebrows at the red herring justification by the RBNZ that retail CBDCs would reduce ‘financial inequities’ – and that bank bureaucrats believe that they should hold the authority to take on such an overtly political role.

# GLOSSARY

NB: Most of these terms* are drawn from the Bank for International Settlements papers. [272] [273]

Application programming interface (API): a set of rules and specifications followed by software programs to communicate with each other, and an interface between different software programs that facilitates their interaction.

Composability: the capacity to combine different transactions or operations on a programmable platform.

Central bank money: money issued by the central bank, such as banknotes, coins, central bank reserves or (more recently) tokenised central bank money.

Digital identity: a set of information about a person or company that can be found and used online.

Finternet: interconnected financial ecosystems that place individuals and businesses at the centre of their financial lives, powered by open, inter-operable technologies and protocols.

Infrastructure services: existing national or sector-specific infrastructure, including identity systems, digital signature certificate systems, connectivity, registrars and registries, and digital public infrastructure, along with any other reusable services available within a country.

Inter-operability: the capacity of diverse digital systems, platforms and applications to seamlessly exchange information, ensuring compatibility across varying technological frameworks.

Ledgers: record-keeping systems that guarantee finality and immutability by ensuring that once transactions are recorded, they cannot be altered, deleted or reversed.

Network of networks: a set of networks where each of these is dedicated to distinct domains and equipped with unique technological infrastructures, governance protocols and user ecosystems.

Observability: the characteristic of a system that provides visibility into necessary transactions and operations, essential for policymakers, regulatory agencies and participants to effectively monitor for operational efficiency and compliance, detect fraud and ensure accountability across the ecosystem.

Programmability: a feature of platforms and other technologies whereby actions can be programmed or automated.

Programmable platform: a technology-agnostic platform that includes a Turing machine with an execution environment and a ledger and governance rules.

Smart contract: self-executing applications of programmable platforms that can trigger an action if some pre-specified conditions are met.

[272] Carstens A. and Nilekani N. (2024) Finternet: the financial system for the future. Bank for International Settlements. https://www.bis.org/publ/work1178.htm
[273] Bank for International Settlements (2023). III. Blueprint for the future monetary system. P.87 https://www.bis.org/publ/arpdf/ar2023e3.pdf

Token: a digital representation of value in a programmable platform. Tokens can be tokenised, ie derived from claims in traditional ledgers, or can be issued natively in the platform, ie “native” tokens.

Tokenisation: the process of recording claims on real or financial assets that exist on a traditional ledger onto a programmable platform.

Tokenised asset: a digital representation of a claim on an asset in a programmable platform.

Tokenised central bank money: a form of digital money, denominated in the national unit of account, which is a direct liability of the central bank.

Tokenised deposit: a digital representation of a bank deposit in a programmable platform. A tokenised deposit represents a claim on a commercial bank, just like a regular deposit.

Token manager: an institution that is responsible for the issuance (tokenisation, detokenisation), management and synchronisation of a token with their private ledger.

Tokenised network: a platform that operates, clears and settles with tokenised money, tokenised deposits, tokenised assets or any other form of token.

Unified ledger (UL): a digital platform that brings together multiple financial assets as executable objects on a common programmable platform.

Unified Interledger Protocol (UILP): set of open protocols that defines the messaging specifications between different unified ledgers to ensure inter-operability and finality of transactions between them.

Verifiable identity: a digital representation that enables verification of an individual’s or entity’s identity through digital means, employing cryptographic methods.