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# Israel`s Cash Cap and Implications on the Country's CBDC Development

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**Abstract:** This paper analyzes the latest developments in Israel`s law to reduce the use of cash and its implications on the Country's retail Central Bank Digital Currency (CBDC) development. Hence, the goal of our paper is twofold: (1) to shed light on the latest limitations of Israel's law to reduce the use of cash as of 1st August 2022, also known as "Locker Agreement", and (2) highlight its implications promoting advanced means of payment and a retail CBDC as an alternative to paper-based means of payment such as cash and checks while enabling privacy. In particular, we present to the audience Israel's latest CBDC blockchain trials aiming to overcome raised privacy concerns. We conclude by challenging the effectiveness of highlighted motivations to potentially issue a Digital Shekel and assess the desired financial inclusion from various angles, before providing an outlook in an area which would be of benefit and interest to academics and practitioners. Finally, we encourage for further empirical research contributions on this field.

**Keywords:** Bank of Israel, Cash Cap, Digital Shekel, Financial Inclusion, Locker Agreement, Privacy Budget, Shadow Economy, Retail CBDC

# 1. Introduction

The use of cash is seen through the eyes of many policymakers and academics as a considerable factor in the shadow economy. Many argue that restricting cash usage would reduce criminal activities such as AML (Anti-Money Laundering), terror financing and tax evasion. Rogoff (2016) addresses the questions in his publication "The Curse of Cash", whether the time has come for developed economies to phase out paper currency (Rogoff 2017 p. 13), and the title for German's national bank international cash conference in 2017: "War on Cash: Is there a Future for Cash?" (Deutsche Bundesbank, 2017) underpins the current debate. Another recent example is the demonetization in India in late 2016, which reduced its currency in circulation by approximately 86% overnight (Lahiri, 2020). Most recently, Israel has tightened its conditions for the use of cash. According to the national tax authority (ITA), new upper limits for the use of cash have been introduced as of 1st August 2022. Hence, the goal of our paper is twofold: (1) to shed light on the latest development in Israel and (2) highlight its implications promoting advanced means of payment in Israel and a retail Central Bank Digital Currency (CBDC), as an alternative to paper-based means of payment such as cash and checks while enabling a certain level of privacy and strengthening financial inclusion.

# 2. Legal Changes

## 2.1 The "Locker Committee in 2014"

In 2010, a policy research working paper, published by Schneider et al. (2010), from the World Bank estimates for 162 Countries from 1999 to 2007 its activities within the shadow economy as a percentage of a country's gross national product (GDP). According to the estimations, the average size of the shadow economy in Israel as a percentage of the GDP is about 22%, amounting to approximately USD 29 billion in 2000 (Schneider and Klinglmair, 2004, p. 8; Schneider, Buehn and Montenegro, 2010). In comparison, Israel lays within the mid-range of 26 analyzed Asian countries' estimated shadow economy. The lower end is marked by Japan with 11.3% while Thailand is by far demonstrating the highest estimated shadow economy in 2000 with 56.6% of the country's GDP. Although hard to quantify, Israel's share of the shadow economy is in an international comparison almost twice as large as in Japan or the

United States (Gruber, 2014, p. 265). Current data, provided by the Quarterly Informal Economy Survey (QIES) by World Economics, confirms the aforementioned size of Israel's shadow economy, which is estimated to be 20.8% leading to approximately USD 100 billion in 2021 (World Economics, 2022). As a response, a special committee under the guidance of Harel Locker, former head of the Prime Minister's Office, was instructed in early 2014 to examine reducing the use of cash to tackle the shadow economy in Israel (Bank of Israel, 2015, p. 2). The Committee, also known as "Locker Committee", suggested an incremental decrease of the use of cash and other paper-based payment methods while strengthening the use of advanced electronic means of payment (Bank of Israel, 2015, p. 3). Table 1 presents an overview of existing advanced means of payment in Israel.

**Table 1:** Overview of existing advanced means of payment in Israel

| Means of payment | Comment |
|---|---|
| **Checks** | The use of checks in particular post-dated checks is common in Israel. Post-dated checks are used by bank clients as collateral to secure loans for their business and in fact, serve as an additional credit facility. They are also used to make periodic tax payments and to pay suppliers in multiple instalments. |
| **Deferred Debit Card** | Most popular payment cards in Israel. The client uses this card to purchase goods and services and pays for them monthly. The merchant is credited, in accordance with the settlement agreement and finances the credit days between the client being debited and the merchant being credited. This card is associated with the client's credit facility, allowing them to withdraw cash from ATMs and/or to pay merchants for goods and services - up to the amount of the credit facility allocated them by the issuer. |
| **Debit card** | The accounts of the cardholder (buyer) and the merchant are debited / credited, respectively, immediately upon conducting the transaction (or up to 1-3 days). This card provides the convenience of a debit card, along with (nearly) immediate transfer of payment - like cash, checks (not post-dated) or bank transfers. |
| **Revolving credit card** | This payment card specifies the maximum monthly amount to be debited and the outstanding debt accrued with respect to additional purchases made using the card are deferred to future month(s) and accrue interest. Such cards are currently only issued in Israel by credit card companies (primarily in conjunction with joint issuance arrangements with retailers and consumer loyalty clubs) - but banks may issue them as well. |
| **Pre-paid cards** | This card is pre-paid by the client with up to the maximum amount for the card, with each payment deducted from the card balance, down to zero. Cards of this type include cards for making purchases at food chains, calling cards etc. These cards can be re-loaded, i.e., they are for single or multiple use - with some being identifiable, while others are anonymous. These cards are issued by credit card companies and by the Postal Bank and may be used with any merchant which accepts the issuer's payment cards. This card may be re-charged in multiple ways: Directly from the bank account, by charging a payment card (deferred, revolving or debit card) or by cash payment. |
| **Electronic wallet** | An electronic wallet can be used for these major functions: (1) Conduct e-commerce transactions; (2) Maintain funds in a virtual (digital) account; (3) Store information about means of payment, such as shipping address and passwords for convenient shopping; (4) Monitor online purchases made on the internet or through the application. |
| **Smart payment card (EMV)** | In Israel, the market has been adapting to smart payment cards – cards which use the advanced Europay, MasterCard and Visa (EMV) security standard. Firstly, in order to use them a PIN must be entered on the merchant terminal, which reduces the use of stolen or lost cards; thus, the transition to such cards would reduce the fraud potential and would improve client and issuer trust. Secondly, this transition would align the local market with the global one, expanding the ability to make payments overseas using cards issued in Israel. |

**Source:** Bank of Israel, 2015, pp. 10–15

## 2.2 Enaction of the "Reduction of Use of Cash" law in March 2018

As a result of the presented interim report prepared by the "Locker Committee", in March 2018, the law to reduce the use of cash was finally enacted (Israel Tax Authority, 2022). In a nutshell, the law "deals with the restrictions of the use of cash and checks" (Israel Tax Authority, 2022) as central measure of crime-fighting. Restrictions apply to dealer, non-dealer, Certified Public Accountants (CPA) and attorneys as well as tourists and will be highlighted in following paragraphs.

According to the law a dealer is defined as a "person who sells an asset or provides a service during the course of his business, including a non-profit organization" (Israel Tax Authority, 2022). The section on restrictions on a dealer highlights the newly introduced regulations. The provisions of the law regarding a dealer as of 1st August 2022 are no cash payment may be given or received:

- in a transaction exceeding NIS 6,000 (c. USD 1,800).
- from a tourist in a transaction exceeding NIS 40,000 (c. USD 12,000).
- as a wage, donation, or loan in an amount exceeding NIS 6,000 (c. USD 1,800) with the exception that shall not apply to loans granted by a supervised financial entity.
- as a gift in an amount exceeding NIS 15,000 (c. 4,500 USD).
- through the medium of check in the absence of the name of the payee noted on the check (Israel Tax Authority, 2022).

Finally, dealers are required to "record the method of payment by which he paid or by which he received the sum of money" (Israel Tax Authority, 2022).

In addition to the section concerning dealers, "an attorney and a CPA shall not receive cash in the context of the provision of a 'business service' to a client":

- over NIS 6,000 (c. USD 1,800) from a dealer for any business service.
- over NIS 15,000 (c. 4,500 USD) from a non-dealer for any business service (Israel Tax Authority, 2022).

Business services include the acquisition or sale of businesses, long-term leasing of real estate, management of customer's assets, such as securities and other managed accounts (Israel Tax Authority, 2022).

In contrast, a non-dealer is defined as "a dealer not in the course of his business" (Israel Tax Authority, 2022). The section on restrictions on a non-dealer highlights the newly introduced regulations. The provisions of the law regarding a non-dealer person as of 1st August 2022 are no cash payment may be given or received:

- in a transaction exceeding NIS 15,000 (c. 4,500 USD) except for a car purchase transaction where the amount remains 50,000 NIS (c. USD 15,000).
- in a transaction to a dealer in the course of the dealer's business, when the transaction price exceeds NIS 6,000 (c. USD 1,800).
- as wages, donations, or as a loan an amount exceeding NIS 6,000 (c. USD 1,800).
- as a gift in an amount exceeding NIS 15,000 (c. 4,500 USD).
- through the medium of check in the absence of the name of the payee and identity number of the endorsing party noted on the check limited to NIS 5,000 (c. USD 1,500) to a non-dealer person (Israel Tax Authority, 2022).

The introduced cash cap is also applicable to tourists. They may not make or receive payment in cash:

- to a dealer for a transaction exceeding NIS 40,000 (c. USD 12,000).
- as a wage, as a donation, or as a loan in an amount exceeding NIS 6,000 (c. USD 1,800).
- as a gift in an amount exceeding NIS 15,000 (c. 4,500 USD).
- through the medium of check in the absence of the name of the payee and identity number of the endorsing party noted on the check (Israel Tax Authority, 2022).

Sanctions for violation and repeated violation of the law are further detailed by the law and may lead to imprisonment for up to three years but will not be further discussed in the course of this paper. Further exclusions on the restrictions on the use of cash for designated parties are introduced covering relatives and their dependents such as spouses and parents and children (Israel Tax Authority, 2022). Furthermore, exceptions for charities, religious institutions, and Palestinians from the West Bank are in place (Koplewitz, 2022).

# 3. Israel Latest Retail CBDC Blockchain Trails Aiming to Enable Privacy and Security

As part of the Digital Shekel project, the Bank of Israel is both analyzing on a theoretical basis and through practical experiments opportunities and threats that may be present in the various technologies for implementing a retail CBDC (Zafrani, Mizrahi and Yoav, 2022, p. 4). One may distinguish between retail CBDC and wholesale CBDC. As defined by the Bank for International Settlements (BIS), a CBDC "would be a digital banknote [which] .. could be used by individuals to pay businesses, shops or each other (a 'retail CBDC'), or between financial institutions to settle trades in financial markets (a 'wholesale CBDC')" (Bank for International Settlements, 2022).

According to Ackerman (2021) one of the first experiments was based on the Ethereum system and aimed to establish a Distributed Ledger Technology (DLT) platform on a cloud for performing basic transactions, for example issuing a Digital Shekel and making a payment. The Bank of Israel clearly stresses, the chosen technology does not indicate that this technology is preferable to others (Zafrani, Mizrahi and Yoav, 2022, p. 5).

For a subsequent experiment the Bank of Israel cooperated with VMware to investigate privacy solutions for a Digital Shekel (Zafrani, Mizrahi and Yoav, 2022, p. 6). The Bank of Israel focused on a hybrid solution where policy makers can define a privacy budget. This budget would allow policy makers to define e.g. a monthly NIS 1.000 budget for privately disclosed transactions, such as doctor's appointments, gifts etc. (Zafrani, Mizrahi and Yoav, 2022, pp. 19–20). Hence, a wallet would have not only ordinary Digital Shekels but also a periodical allocation of private Digital Shekels where transactions will not be recorded on the blockchain and thus allowing privacy (Zafrani, Mizrahi and Yoav, 2022, p. 20). However, full privacy will no longer be possible.

Most recently, according to press releases in June 2022 the so-called "Sela Project" was announced, which is a cooperation of The Hong Kong Monetary Authority (HKMA), together with the Bank of Israel and the Bank for International Settlements Innovation Hub (BISIH) Hong Kong Centre, with the purpose of a joint research on retail CBDC. The project will focus on resilience tests of a retail CBDC architecture to ensure high cybersecurity. Initial outcomes are expected to be completed by the end of 2022 (Hong Kong Monetary Authority, 2022).

# 4. Critical Discussion

The newly introduced transactional limitation to reduce the use of cash in Israel is in line with the central bank's aim to develop a retail CBDC (Mizrahi et al., 2022, pp. 9–10). Already in November 2017 the Bank of Israel formed a cross-functional team to investigate digital currencies issued by central banks (Bank of Israel, 2018, p. 2). One year later, a report called "Report of the team to examine the issue of Central Bank Digital Currencies" has been published emphasizing to accelerate theoretical research on the issue of a digital currency and monitor global developments (Bank of Israel, 2018, pp. 2–3). Until now, the Bank of Israel has not made a final decision to issue a CBDC. So far, an action plan has been developed providing a transparent view on benefits, risks and costs of issuing a Digital Shekel and enables the bank to put this plan in action when needed (Bank of Israel, 2021a, pp. 8–9). In a global context, payments markets, not only in Israel, are set within a dynamic environment which has been even accelerated through the COVID-19 crisis and implicated added motivation to progress in the CBDC development (Bank of Israel, 2021b). The Bank of Israel steering committee on the potential issuance of a Digital Shekel highlighted its motivations for issuing a CBDC, two out of which are linked to the aforementioned law to reduce the use of cash (Bank of Israel, 2021a, p. 5).

Firstly, "maintaining the public's ability to use digital means of payment while maintaining a certain level of privacy" (Bank of Israel, 2021a, p. 27). While using cash is completely anonymous, a CBDC can maintain only partially characteristics of ensuring a payer's or receiver's privacy. As the new means of payment intend to reduce money laundering activities, tax evasion and financing of terrorism, at the same time the payer or receiver of a transaction will

be able to maintain its privacy for transactions up to the allowed limits only (Bank of Israel, 2021a, p. 27). As a result, full privacy will no longer be possible.

Secondly, a key motivation for issuing a CBDC in Israel is the "support of the government's policy to reduce the use of cash and in the struggle against the unreported economy" (Bank of Israel, 2021a, p. 27). Besides the introduced cash cap for transactions, the new law fosters alternative means of payment such as immediate debit cards and prepaid cards. (Bank of Israel, 2021a, p. 27). Although as highlighted by Koplewitz (2022) exceptions have been implemented for charities, religious institutions, and Palestinians from the West Bank, the introduced law will have a direct impact not only on non-dealers, dealers and CPAs but also on foreign workers, children and tourists alike. Hence, the desired financial inclusion may be questioned. In consequence, the reduction of use of cash as part of the motivation to develop a CBDC should be viewed critically. The Bank of Israel summarized public responses in reference to the Digital Shekel project and addresses the financial inclusion motivation. The committee received in total 33 expert responses (Mizrahi et al., 2022, p. 4) expressing on the one hand that some experts "expressed doubt" that a Digital Shekel would be accepted by groups that primarily use cash, such as elderly, children and other avoiding technological means of payment. On the other hand, other respondents argue in favor of financial inclusion, as "this audience tends to make less use of banking services, but has smartphones. Therefore, those respondents believe that there is high potential for this group to adopt a Digital Shekel" (Mizrahi et al., 2022, p. 9).

According to the monthly reports of the German National Bank (hereinafter referred to as: Deutsche Bundesbank) about cash demand in the shadow economy, empirical evidence on restricting the use of cash and its implications on the shadow economy to fight tax evasion and other criminal activities is scarce and often are the presented econometrical outcomes influenced by the omitted-variables bias and thus should be interpreted with caution (Deutsche Bundesbank, 2019, p. 58). In addition, cash is not the only instrument to finance crimes within the shadow economy, as digital payment instruments, such as crypto assets are gaining significance in the shadow economy where transactions are settled via the internet or darknet (Deutsche Bundesbank, 2019, p. 43). In conclusion, it remains open if the introduced limitations by the Locker agreement will be effective in crime fighting.

Finally, other motivations highlighted by the Bank of Israel include i.a. the cost reduction of offered bills and coins resulting in a streamlined cash system as well as the creation of an innovative, resilient infrastructure that enables a competitive, cross border adaptation of the payment system according to the needs of the digital economy (Bank of Israel, 2021a, p. 30).

# 5. Conclusion

As already highlighted in the critical discussion, financial inclusion is a major concern in reference to the enacted law to reduce the use of cash. The Bank of Israel also considers this perspective of "challenges in Israel regarding financial inclusion" (Bank of Israel, 2021a, p. 30). People preferring cash over alternative means of payments will have no interest in using any CBDC. Fein (2018) supports this view and adds that the Israeli law to reduce using cash shows that cash as an anonym medium of payment is crucial to many communities, which have no access to alternative means of payments. Hence, the necessity of cash shall not be ignored (Fein, 2018, p. 4). Yoav and Soffer (2022) consider in the Bank for International Settlements (BIS) Papers No. 123 "CBDCs in emerging market economies" that many highlighted benefits of issuing a CBDC may also be realized through an improvement and upgrade of the current payment system and its already existing alternative means of payment and not solely through the issuance of a Digital Shekel. Furthermore, the authors stress that the issuance of a CBDC may involve potential risks, such as a premature implementation poses the risk of expensive upgrades in the payment infrastructure (Yoav and Andrew, 2022, p. 103).

In conclusion, a CBDC for Israel is still in its development and research stage. Nonetheless, a Digital Shekel will never be as anonymous as cash. However, the presented experiments underpin that privacy may be allowed for targeted groups and specific transactions. Hence, policy makers should be able to decide on such privacy criteria. Finally, the Bank of Israel noted that the current state of technical solutions poses further questions such as what might be the right privacy budget? And will it be the same for each individual and business? (Zafrani, Mizrahi and Yoav, 2022, p. 23). As next steps, the Bank of Israel will most likely continue with its technological experiments, while performing economic analysis of a CBDC implementation, detailing characteristics, and requirements of a retail CBDC as well as developing parameters set within an action plan to move from an exploration stage to a next phase.

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