CHAPTER 2

THE MAIN CHANGES IN THE BANKING SYSTEM

Israel's banking system has been going through far-reaching changes in the past decade, in response to changes in the technological environment, the competitive environment, consumer tastes, and new financial regulations, all against the background of a changing macroeconomic milieu. In recent years, structural changes throughout the financial system, specifically including the banking system, have been accelerating for reasons that include the Banking Supervision Department's goals for these years: promoting and stimulating technological innovation and encouraging the banking system to be more competitive, foremost vis-à-vis retail customers—all of which to enhance the public welfare.

The COVID-19 crisis, erupting powerfully in early 2020, presented the domestic economy with new challenges. The movement restrictions forced the banks to offer their customers remote banking services. Economic developments generally and high unemployment particularly, coupled with large provisions due to fear of large credit losses, eroded the banks' income all year long. Nevertheless, it is evident that the efficiency measures that were invoked in recent years helped to attenuate the losses that accumulated in 2020. Furthermore, the accelerated digitization processes proved themselves during the crisis by enabling bank customers to continue consuming varied banking services on direct channels (including digital applications and web sites) even at times when movement was severely restricted.

The challenge of the economic crisis in 2020 also brought new opportunities in view of the acceleration of digital developments during the crisis and policy measures that were taken to normalize Israel's relations with several Arab countries during the year—particularly the signing of the "Abraham Accords."

Four main processes appear on the map of developments that are shaping Israel's business and banking environment at the present writing:

a. A challenging macroeconomic reality in view of the exit from the COVID-19 crisis, coupled with attention to new global developments. At this writing the Israeli economy appears to be climbing out of the economic crisis. The crisis, however, created many challenges that the economy, and the banking system within it, will have to tackle in coming years. These include supporting the recovery of the small-business sector; phasing out crisis-related unemployment compensation; gradually cancelling the loan payment deferral programs (possibly making individuals less able to repay their loans); gradually re-tightening the dispensations that the banking system received in view of the crisis; and restoring the accumulation of capital and adjusting it to the structure of banking system risks, to name only a few. These are all at a time

of domestic and foreign interest rates that are low and are expected to remain low for much time to come. Low interest rates challenge the banking system by making it hard to generate profit streams based on income derived from interest rate spreads. This challenge, which banking systems around the world have been facing for several years, forces banks to continually adjust their models of activity in order to remain profitable despite falling interest rates worldwide and growing competition in the markets. In addition to the challenges and to various kinds of risks, there is growing attention on the risk-management front to risks associated with climate change. These risks have risen to the forefront of attention in the global financial-service industry in view of global warming, climatic phenomena around the world, and scientific data that substantiate the immensity of the climate risks and the urgency of dealing with them. Accordingly, demand for more meaningful social and corporate responsibility in environmental contexts is growing, affecting the banks' activity and, in particular, the internalization of the environmental aspects into their banking model. (For elaboration, see Box 2.1.)

b. Continued promotion of competition in the financial services system. The Banking Supervision Department has been acting in several ways in recent years to promote and encourage competition, including mapping and eliminating barriers to competition in various fields, foremost the entry of new players; lowering information and technology barriers, and so on. (For elaboration on the Banking Supervision Department's measures to enhance competition within the framework of the competition enhancement committee, see Box 3.2 in this Report.) Last year, too, the two largest banking groups completed their separation of credit card companies (see Section 6 in Chapter 1 of this Report) and the first new banking license in forty years was issued, for a digital institution. (For elaboration on the barriers that were cleared away in order to allow new banks to be established, see Box 3.4 in the banking-system survey for 2019.) At the present writing, the Banking Supervision Department is mulling the entry of additional new players in the banking market and promoting two projects of immense importance for the enhancement of competition. One is called "Switch Banks at a Click," a system of current-account portability that is scheduled for practical activation in September 2021. The other is "Open Banking" (an open banking API). This project, the first stage of which became operative in April 2021, is expected to allow meaningful progress toward competition in the retail credit market to be made. The Banking Supervision Department also supported the establishment of a shared banking computer center (after noting that the lack of such an infrastructure is a major impediment to the entry of new banks). In early 2020, TCS Ltd., won a bid to set up a digital banking services bureau that will serve several banks and other financial-service entities; the bureau began its activity in early 2021. (For elaboration on eliminating the digital-services barrier, see Chapter 3 in this Report.) Finally, the Banking Supervision Department is continuing to examine additional ways of advancing competition and transparency for customers in all activity segments of the banking system.

c. Technological developments and financial innovation. The banking system is continuing to adopt new technologies both as part of banks' ongoing processes, by basing itself on information and development of models to streamline processes and enhance automation; and within the framework of customer interface, by improving and expending digital interfaces, making better use of information to present customers with offers of value to them, developing new digital applications, and collaborating with fintech companies to promote innovative products and develop reg-tech (banking regulation technologies). All of these present the banking system with technological challenges as the system strives to ameliorate and improve its automation processes and develop models to detect and identify irregularities in order to assure a convenient, efficient, and trouble-free working interface. New fintech initiatives in the field of payments and electronic wallets, along with the activities of technological giants ("big-tech") in the financial services market, are also encouraging the banking system to continue developing products that will allow effective competition in this arena to take place. As digital currencies gain momentum worldwide, Israel is also giving first thought to the creation of an Israeli digital currency while examining its implications for the country's banking system. (For elaboration on central banks' digital currencies, see Box 2.3 in this Report.) In the area of payments, after the Bank of Israel spent several years promoting the implementation of an EMV standard[1] in the credit card settlement market, the final and binding wording of the standard was published, leading in 2020 to a strong flow of businesses that switched to payments using this standard. (For elaboration about the adoption of the EMV standard, see Chapter 3 in this Report.)

d. New economic opportunities under the "Abraham Accords." In 2020, Israel signed a series of agreements with five Arab countries, including the United Arab Emirates, that announced the establishment of peace and the normalization of diplomatic relations. The UAE is an international economic hub of trade and finance; therefore, the peace accords with this country give Israel an economic opportunity to leverage its international trade and promote economic cooperation. Consequently, the Banking Supervision Department began to create direct professional channels of communication with its UAE counterparts and Israel's banking corporations took first steps toward the consolidation of bilateral professional working relations. In this construct, the signing of memoranda of understanding between Israeli and Emirati banks promoted interbank transfers of funds, supported international trade, lowered barriers against credit activity, and so on. (For elaboration, see Box 2.2 in this Report.)

[1] An information-security standard that creates a basis on which innovation in payments may be implemented.

BOX 2.1
ENVIRONMENTAL RISKS AND CONSIDERATIONS IN THE ACTIVITIES OF BANKING CORPORATIONS

- **Global awareness of the existence and extent of environmental risks has been increasing in recent years. Of particular concern are risks deriving from climate change, against the background of, among other things, worldwide climate phenomena and scientific data that substantiate the magnitude of climate-related risks and the urgency of dealing with them. Banking corporations are among the entities exposed to major environmental risks, including climate risks.**
- **Decision-makers in various countries have been formulating policies and action plans for dealing with the formidable threats that environmental and climate-related risks pose. These risks pertain to numerous aspects of human society and demand harmonic and effective solutions that entail coordination and cooperation among all relevant policymakers. In the financial context, international regulatory entities, central banks, and financial supervisors are producing roadmaps for integration into comprehensive policies and to lead banking systems to adequately coping with environmental risks. In addition, to mitigate environmental risks, regulatory rules are being issued and voluntary initiatives are being taken to integrate ESG[1] considerations into investment decisions and other business activities in order to promote the transition to "greener" financing.**
- **Management of environmental risks, particularly those originating in climate change, presents special challenges for reasons including uncertainty about the extent, pace, and timing of future environmental events and processes and the lengthy horizon that has to be taken into account when the risks are analyzed. These are all in addition to limitations of access to business information in matters of environment and the quality of such information. Most recommendations and guidance in this matter, published by financial regulators and supervisors around the world, relate to aspects of corporate governance, strategy, risk management (including risk identification and measurement), scenario analysis and disclosure.**
- **The Banking Supervision Department considers it immensely important to deal with the financial aspects of environmental and climate-related risks and has taken action in this matter on several levels. Back in 2009, it articulated its expectations of banking corporations in regard to managing environmental risks in a letter from the Supervisor of Banks. In the letter, the Supervisor defined the identification and assessment of environmental risks as part of an adequate process of a banking corporation's risk assessment, and instructed banking corporations to assimilate the environmental-risk management into their overall risk-management conduct. Banking corporations are required to apply these guidelines taking into account the standard practices in advanced economies and the recommendations, directives, and standards of those countries' supervisory authorities. In addition, for numerous years, the Banking Supervision Department has been requiring that banking corporations reflect the way they manage environmental risks in their public statements. In addition, the Banking**

[1] Environmental, social, and governance.

Supervision Department requires banking corporations to publish corporate-responsibility reports that reflect, inter alia, the way they integrate social and environmental considerations into their decision-making—even before similar requirements were introduced abroad.

- **In view of significant developments in recent years in environmental risk management practices and the vast importance that the Banking Supervision Department attributes to the matter, the Banking Supervision Department decided to formulate up-to-date and comprehensive regulation of this area of activity. It began the process by holding a dialogue with the banks to review the practices that they had developed and to examine their alignment with the supervisory expectations and accepted milestones worldwide, among other things through a questionnaire sent to the banks. The regulation that will be formulated is expected to be based on the regulatory principles generally accepted worldwide, with the necessary adjustments to the local environment. In addition, given the experience accumulated abroad about disclosure in matters of corporate responsibility (integration of ESG considerations), the Banking Supervision Department is considering the possibility of improving banking corporations' disclosure in these respects.**

1. General Background

Awareness in Israel and abroad of the existence and extent of environmental risks has been increasing in recent years. "Environmental risk" denotes exposure to potential damage as a result of events or processes related to the environment, including climate change. Environmental risks pose a significant threat to many entities, including banking corporations. Generally speaking, banks are exposed to these risks both directly and indirectly. A bank may sustain a direct adverse impact, for example, in the event of environment-related damage to physical infrastructures that are essential to its business continuity. Indirect harm may originate in a negative impact to the bank's customers, the value of collateral that it holds, or the value of its investment portfolio. Thus, a bank may incur an indirect negative impact, for example, if it financed the activity of a company that has been harmed by the repercussions of environmental damage that it caused or by environmental phenomena that negatively impacted the company. The affected company may be less able to repay its debts and, as an indirect consequence, the bank's assets may lose value. It is assessed that the very stability of certain countries' financial systems may be affected if extreme environment risks come to pass. For example, this could be when "natural disasters" such as earthquakes, massive fires, storms, droughts, and so on, occur. These phenomena may cause far-reaching systemic harm, including damage to buildings, infrastructures, supply chains, and production capacity. The negative impact on assets and economic activity may, among its other effects, impair firms' and households' repayment ability and cause financial risks to the entities that fund them, including banks, to become real. Concurrently, insurance companies that cover damaged properties may struggle to withstand claims of such magnitude. Ultimately, in extreme situations, financial institutions may sustain losses that are too large to absorb by equity, possibly even causing a "contagion effect" to ripple through the financial system.

The global internalization of environmental risks is being reflected in a marked upturn in the extent and sophistication of environmental regulation. International institutions and governments, enlisting in a global effort to mitigate the impairment of environmental quality, are acting vigorously by promoting far-reaching

and challenging initiatives such as the Paris Agreement, adopted by many countries including Israel.[2] With these processes in the background, financial regulators are also making an effort to develop principles for financial systems to apply as they cope with environmental risks and act to mitigate them. They include expanded development of **tools for the identification and assessment** of environment risks, the formulation of **principles for the management** of these risks, the creation of **information disclosure requirements** in environmental matters, and measures to encourage the **transition to "green finance."** Although these developments present financial-service institutions with acute challenges, they also enhance information transparency and business opportunities (such as participation in the green financing market and financing renewable energy projects).

With the Paris Convention in the background and climate phenomena unfolding in various regions of the globe, the world is increasingly focused on **climate change** as the main environmental problem that demands immediate attention, including in the financial context. Climate related risks are generally divided into two kinds: **physical risks**, originating in exposure to potential direct harm (from fires, floods, droughts, storms, etc.) and **transition risks**, emanating from the potential effects of changes and adjustments that take place as part of the dealing with climate related risks and attempts to mitigate them (such as policy changes, transitioning to a low carbon economy, adopting green technologies, and revising market priorities).

Climate change is a global problem and broad international cooperation is needed to cope with it. Tools and indicators for the testing and management of climate-related risks, financial and other, are developing rapidly, but in many respects no single, complete, and agreed-upon outlook has been formulated. In January 2021, as part of the change of administrations in the United States, the incoming president, Joe Biden, reinstated America's commitment to the Paris Agreement and issued a presidential order that reflects a dramatic change in administration policy on climate-related risks. Among other things, it establishes the centrality of the climate crisis in US foreign policy and defines it as a national security issue, and it restores the US position of world leadership in this field. This development is expected to help expedite global activity for the cause.

From the banking perspective, the realization of environmental risks may find general expression as the realization of classic financial risks including credit, market, liquidity, operating, and reputation risks. Managing environmental risks, however, requires a change of mindset for reasons that include, but are not limited to, the need for a long-term view. The lengthy time horizon that pertains to environmental threats poses major challenges in creating models and stress test scenarios that will make it possible to reliably assess the risk. In view of these challenges, the COVID-19 pandemic and the economic crisis that it precipitated appear to have substantiated the power, the destructiveness, and the likelihood of global disasters. Thus, they enhanced awareness of the need to bolster the economic and financial systems against environmental and climatic shocks as well.

[2] The Paris Agreement is an international convention on climate change, approved under the auspices of the climate conference held in Paris in December 2015. It includes, but is not limited to, an undertaking to reduce greenhouse gas emissions in order to restrain global warming in accordance with targets set forth in the Agreement. The Agreement was adopted by many countries including Israel (in April 2016) and went into effect in November 2016.

2. International developments

According to the conventional wisdom around the world, dealing with environmental and climate-related risks in their financial context comes under the mandate of financial regulators and supervisors due to the potential financial and socioeconomic ramifications and macroprudential effects of these systemic risks if they come to pass. Accordingly, environmental risk has become central on the agenda of financial regulatory and supervisory institutions around the world, as manifested in the many regulatory initiatives and publications on the topic. (For specifics, see the Appendix.) However, although the need for practical and immediate measures is being internalized, it is evident that the financial world is still considerably uncertain about the scenarios for which it should prepare. At this point in time, it seems clear that the financial community has to balance an attempt to devise optimal methods and tools to detect, estimate, and manage the risk, with the need to act at once despite the uncertainty.

Along with regulatory initiatives that have reached various stages of maturity, there has been major progress in the way global financial institutions have been integrating social and environmental considerations into their business decisions. These trends even find expression in the emphasis in financial entities' public financial statements on ways in which they are fitting social and environmental considerations into their business strategy and meaningful improvements in disclosure on these topics in corporate-responsibility reports. In this regard, we note that there is a claim that financial entities and businesses that incorporate social and environmental considerations in conducting their activities may gain some economic and financial benefit, in addition to the positive contribution to the environment and to society. According to this, adopting social and environmental considerations can directly help the resilience of the financial entity or the company that adopts them, among other reasons due to the positive impact on risk management and on their reputation. Some backing for this claim can be seen in research conducted by a group of researchers from universities in Israel and in Hong Kong. They found that adopting a framework of environmental and social principles by banks could generate value for the companies that borrow from them. The research supports the assessment that companies can reduce their cost of debt and equity by committing to ESG considerations attained by executing loan contracts with banks that committed themselves to a framework of social-environmental principles.[3]

The global processes now under way in an attempt to moderate climate change and the need to cope with it more effectively are indicative of the decisive importance of universal involvement in tackling these issues. In January 2020, the Bank for International Settlements and the Banque de France co-published The Green Swan, in which climate risks are taken up from a broad point of view (for an expanded discussion, see the Appendix). The authors stress that, in view of the special challenges that arise in climate-risk management, **the activities of central banks and financial regulators and supervisors, although essential, are no substitute for actions that governments, private entities, and the international community must take, and should be considered supplemental to broader policies.** In the authors' view, the treatment of this collective and complex problem requires cooperation and coordination among all stakeholders.

[3] Amiram, Dan and Gavious, Ilanit and Jin, Chao and Li, Xinlei. "The Economic Consequences of Firms' Commitment to ESG Policies", (February 2, 2021). HKUST Business School Research Paper No. 2021-29, Available at SSRN: https://ssrn.com/abstract=3838462 or http://dx.doi.org/10.2139/ssrn.3838462

3. Developments in Israel

The Banking Supervision Department in Israel attributes much importance to optimal management of environmental and climate related risks in the financial context and to efforts to mitigate them, and has been active in this matter for many years. The Banking Supervision Department goes about these activities in various contexts and sees them, inter alia, as part of its responsibility for ongoing macroprudential stability, an essential matter for supporting the resilience of the economy both in the long term and when crisis strikes.

On June 11, 2009, in a letter to the banking corporations concerning environmental risks, the Supervisor of Banks instructed the corporations to identify and assess environmental risk as part of their risk assessment adequacy process and to act to assimilate the management of exposure to environmental risk into the banking groups' overall risk management. In particular, the corporations were instructed to have policies and procedures in place for the detection of material environment risk when they issue credit and to integrate an assessment of this risk into their periodic assessments of credit quality. The Banking Supervision Department did not dictate explicitly how the demand in the Supervisor's letter was to be applied, leaving this to the banking corporations. It did instruct them to be mindful when implementing the directives of practices in advanced economies and recommendations, instructions, and standards put out by advanced economies' banking-supervision authorities.

Given the important developments in recent years in environment-risk management practices abroad, the Banking Supervision Department decided to promote up-to-date and comprehensive regulation in this field and even drew up a roadmap for its own use as it implements the process. The process now being planned is phased, long-term, and largely based on regulation under development abroad and the Banking Supervision Department's ongoing monitoring and learning in this matter. Generally, the regulations being formulated are expected to reflect supervisory expectations in the five aspects mentioned in the NGFS (Network for Greening the Financial System) Guide for Supervisors in May 2020: corporate governance, strategy, risk management, scenario analysis and stress testing, and disclosure. (For specifics, see the Appendix.) Several months before the present writing, as part of the regulatory process and by means of a questionnaire and other methods, the Banking Supervision Department initiated a dialogue with the banks to review their practices on the topic, the fit between these practices and accepted supervisory expectations and yardsticks abroad, and the challenges that they are facing. The regulations to be formulated will probably be based on accepted regulatory principles abroad along with optimal adjustment of international regulations and expectations to the domestic environment. Concurrently, the Banking Supervision Department is continuing to monitor the significant and rapid developments in this matter.

As for public disclosure of information, the Banking Supervision Department has been instructing banking corporations for years to integrate into their public financial statements qualitative and quantitative information about the main risks to which they are exposed, including environment risks, and how they are managing them. In addition, the Banking Supervision Department requires banking corporations to issue corporate-responsibility reports that reflect, among other things, the way they integrate social and environmental considerations into decision-making that relates to the economy's long-term sustainability. Reliable and accessible information in these contexts emphasizes the banking system's commitment to economic sustainability and, thereby, helps to maintain the public's confidence in it. In view of experience amassed abroad about disclosure in matters of corporate responsibility and ESG, the Banking Supervision Department is weighing possible ways of improving the banking corporations' disclosure in these regards.

The Bank of Israel has also expressed its support of efforts by the Israel Securities Authority since 2020 to encourage nonbank public corporations to provide disclosure about their management of ESG risks.

In addition to these processes, the Bank of Israel is a member of joint thinking teams and forums together with government ministries, additional financial regulators, public authorities, academics, and others that together are promoting issues related to environmental risks and national preparedness for climate change, among other things from the economic and financial perspectives. As part of these collaborations, there are study days and professional workshops on relevant issues.

To mobilize for the global effort and improve information in this field, the Bank of Israel in October 2020 joined several central banks and supervisory authorities under the umbrella of the NGFS, a network that promotes the greening of the financial system (for an expanded discussion see the Appendix).

The Bank of Israel keeps regular track of international publications, accumulated experience, and trends abroad regarding environmental and climate-related risks. Given the multiple aspects of these risks even when the focus is placed on the financial implications, a broad and inclusive view and cooperation among many entities are needed. The activity of the Bank of Israel and the financial sector in this regard is supplemental to that of government ministries and policymakers in charge of dealing with environmental protection and coping with the climate crisis; it is all entities' duty to join forces in this global struggle.

Appendix

Publications and Initiatives of International Regulatory and Supervisory Authorities

Concern about the financial aspects of environmental and climate-related risks is broad and has been growing significantly in recent years. Accordingly, it is reflected in numerous and frequent initiatives, innovations, and publications. Several important recent developments in this context follow.

Task Force on Climate-Related Financial Disclosures (TCFD)

In 2015, in view of the need for reliable financial information that will allow the markets to correctly price risks and opportunities related to climate change and the transition to a reduced-carbon economy, the Financial Stability Board (FSB)[4] established the Task Force on Climate-Related Financial Disclosures (TCFD).

In **June 2017**, the TCFD published a recommended framework for climate-related financial disclosure for entities in various sectors.[5] The purpose of such disclosure is to reflect the assessment of the reporting entity of the risks and opportunities it faces in climate-related matters and the way they should be managed. Disclosure pertains to four main elements: corporate governance; strategy; risk management; and indices and targets. The recommended indices and targets relate to the estimation of risks and opportunities (e.g., energy, land use, and waste management indices), disclosure of direct and indirect emissions of greenhouse gases, and description of targets set in accordance with expected regulatory requirements, market limitations, or other purposes (e.g., levels of greenhouse-gas emissions, use of water and energy, and so on). The reporting

4 The FSB is an international body that was set up to promote international financial stability by monitoring, publishing recommendations, and coordinating the actions of national financial supervisory authorities and setters of international financial policymaking standards.

5 Recommendations of the Task Force on Climate-Related Financial Disclosure, TCFD, June 2017.

entity must also disclose how well the targets are being attained. The TCFD recommends that environment-related disclosure be integrated into companies' annual financial statements to the extent possible, so that it may contribute to use and control of the information. Beyond disclosure recommendations that pertain to all sectors, the TCFD wrote specific disclosure guidelines for financial entities. Its recommendations have become a widely embraced global standard, adopted by the EU and the UK among others.

Network for Greening the Financial System (NGFS)

The NGFS—a network of central banks and supervisory authorities that cooperate to make the financial system greener—was established in December 2017 at the One Planet Summit convention in Paris. By February 2021, the network comprised eighty-seven members and thirteen observers (including the Basel Committee and the World Bank). The Bank of Israel joined it as a regular member in October 2020. Since its formation, the NGFS has published many documents that garnered international attention, including the following important publications:

In **May 2020**, the NGFS published a guide for supervisors on integrating climate-related and environmental risks into prudential supervision.[6] The guide presents five recommendations that are meant to inspire supervisors to treat the matter with greater celerity, allowing the possibility of adjusting the manner and pace of treatment to local supervisory needs. The recommendations are:

- Examine the way environmental and climate-related risks transmit to the domestic economy and financial sector and how crucial they may be for supervisory entities.
- Develop a clear strategy, create internal organization, and ensure adequate resource allocation for dealing with the issue.
- Identify supervised entities' exposures to environmental and climate-related risks and estimate the losses that may occur should these risks materialize.
- Formulate and express supervisory expectations of an adequate prudent approach to environmental and climate-related risks. Five topics conventionally addressed are corporate governance, strategy, risk management, scenario analysis and stress testing, and disclosure.
- Assure appropriate management of environmental and climate-related risks by financial institutions and take supervisory measures to mitigate them where necessary.

In **June 2020**, the NGFS published two documents on climate scenarios—Climate Scenarios for Central Banks and Supervisors, proposing a joint point of departure for the analysis of climate-related risk, and a practical guide to scenario analysis for use in assessing climate-related risks to the economy and the financial system.[7] The NGFS noted that even though the first of these documents is addressed mainly to central banks and supervisors, it may also be helpful to the rest of the community. At a professional workshop held by the Basel Committee in October 2020, the NGFS scenarios were found useful for creating a shared point of departure for climate-risk analysis.[8]

[6] Guide for Supervisors: Integrating Climate-Related and Environmental Risks into Prudential Supervision, NGFS, May 2020.
[7] Climate Scenarios for Central Banks and Supervisors, NGFS, June 2020;
Guide to Climate Scenario Analysis for Central Banks and Supervisors, NGFS, June 2020.
[8] High-level summary: BCBS TFCR industry workshop on climate-related financial risks, October 2020.

In **September 2020**, the NGFS put out a report on methods of assessment and analysis of environment risks that financial institutions around the world have been using.[9] The report explains in detail how environmental risks may evolve into financial risks and surveys tools and methodologies for the analysis of these risks, including scenario analysis and stress testing. The authors note that while financial entities may be directly exposed to environmental risks—for example, when headquarters in coastal areas are exposed to rising water levels—their main exposure is indirect, deriving from susceptibility to environmental risks among their customers and among companies in which they have invested. The detailed explanations of the way fleeting or ongoing climate-related events may damage financial entities are parsed by their potential broad micro- and macroeconomic repercussions.

European Union

The European document promulgated in **October 2014**, known as the Non-Financial Reporting Directive (NFRD), lays down rules for the disclosure of non-financial information.[10] Under its provisions, large public companies of public interest must, from 2018 onward, integrate non-financial information, including references to environmental protection and social responsibility, in their annual financial statements. In **February 2020**, a paper was issued after a public consultation on the need to make revisions in the directive.

In **March 2020**, the European Union's Technical Expert Group on Sustainable Finance (TEG) published the final version of its EU taxonomy document.[11] The paper is meant to create a common terminology and define the economic activities that may be considered "sustainable" in the environmental sense. Its authors expect it to protect investors, help companies receive access to green financing through improving their environmental performance, and ultimately help to steer investors to places where they are more needed. The report presents technical criteria for classifying economic activities on the basis of their impact on six environment-related goals, including climate change mitigation, climate change adaptation, and miscellaneous environmental-protection actions.

European Banking Authority (EBA)

In **December 2019**, the European Banking Authority (EBA) published an action plan on sustainable finance that aims to support strong, sustainable, balanced, and inclusive economic growth in which environmental, social, and governance (ESG) considerations are integrated into investment decisions.[12] The plan presents the EU strategy and milestones for future work on the topic.

In **October 2020**, as part of its application of the plan, the EBA published a discussion paper for the public on management and supervision of ESG risks for credit institutions and investment firms.[13] The authors present definitions, explanations, and methodologies for the assessing of ESG risks. Among other points, the EBA encourages financial entities to adjust their business strategies to the presence of ESG risks and to develop stress tests in regard to them. The EBA also believes it is necessary to develop supervisors' ability

[9] Overview of Environmental Risk Analysis by Financial Institutions, NGFS, September 2020.

[10] Directive 2014/95/EU, THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION, October 2014.

[11] Taxonomy: Final Report of the Technical Expert Group on Sustainable Finance, TEG, March 2020.

[12] EBA Action Plan on Sustainable Finance, EBA, December 2019.

[13] EBA Discussion Paper, "On Management and Supervision of ESG Risks for Credit Institutions and Investment Firms," EBA, October 2020.

to determine whether the entities they supervise are testing their long-term resilience to transition risks, even beyond the commonly used timeframe of three to five years forward and perhaps even beyond the ten-year horizon that certain countries have already adopted. The EBA will take the feedback to this document into account in formulating its stance on the need to establish a capital requirement for exposure to ESG risks, among other matters.

European Central Bank (ECB)

In **November 2020**, the European Central Bank (ECB) published a guide that presents its expectations of the banks in regard to managing and disclosing environmental and climate-related risks within the framework of the existing prudential rules.[14] The thirteen supervisory expectations set forth in the guide are accompanied by detailed explanations and practical examples. The expectations pertain to four main topics: business models and strategy; corporate governance and risk appetite; risk management; and disclosure. Among other things, environmental and climate-related risks are to be included in internal assessments of capital adequacy.

Although the supervisory expectations expressed in the guide are not obligatory, the ECB stated that the "significant banking entities" that it supervises directly will be asked to review their stance on these expectations in 2021 and draft action plans accordingly. In 2022, the ECB will conduct a full supervisory review of the banks' working methods and take action where necessary. Also in 2022, the ECB will carry out supervisory stress tests in reference to environmental risks. The ECB urges national authorities in the EU to adopt the expectations expressed in the guide in their supervisory jurisdictions, commensurate with the extent of activity and the complexity of the entities that they supervise.

Basel Committee

In **February 2020**, the Basel Committee established the Task Force on Climate-Related Financial Risks (TFCR), which in **April 2020** published the results of a survey among twenty-seven member and observer states.[15] The findings included the following:

- Most respondents acted in various ways to enhance banks' awareness of climate-related risks.
- Some 40 percent of respondents issued supervisory guidelines on the topic or were formulating them. Not all the guidelines were obligatory; sometimes they were based on principles or interpretations of existing rules.
- Eighteen countries conducted surveys on banks' management of climate-related risks. About half reported that the banks were in the early stages of developing an approach to managing these risks and only a few conducted stress tests.
- Most countries had not integrated climate-related risks into their supervisory capital requirements and most had not yet begun to consider this move. Some described themselves as being far from able to quantify these risks in terms of capital requirements.

[14] Guide on Climate-Related and Environmental Risks—Supervisory Expectations Relating to Risk Management and Disclosure, ECB, November 2020.

[15] Climate-Related Financial Risks: A Survey on Current Initiatives, BCBS, April 2020.

The BIS and the Banque de France

In January 2020, the BIS[16] and the Banque de France published The Green Swan,[17] a book that surveys the main challenges that climate change poses to central banks, regulators, and supervisors, and offers possible ways of coping with them within their existing mandates. The authors express climate-related risks through the metaphor of a "green swan"—a potential extreme financial disruption occasioned by climate change that may trigger the next macroprudential crisis. In view of the prudential threat that climate change presents, the authors explain, central banks and supervisors who have prudential responsibilities have an important role to play in preventing crises of the "green swan" type. However, the singular characteristics of climate-related risks impede the integration of these risks into the framework of prudential monitoring and supervision, especially due to the extreme uncertainty that comes with physical, social, and economic phenomena that change continually and come with complex dynamics and chain reactions. No single model or scenario yields a full picture of the possible macroeconomic and other effects of such an event.

Given the special challenges of climate-related risks, the authors stress, central banks' activity cannot and should not substitute for the actions that governments and private entities need to take. Central banks, regulators, and financial supervisors are limited in their ability to contribute to the comprehensive effort that is needed to mitigate climate changes; their activity in this field should be seen as supportive of the other essential measures.

Regulators and supervisory authorities in advanced economies

Regulators and financial supervisors in advanced economies have published various documents that relate to environmental risks. In particular, we note those of financial regulators in Singapore and the UK. **In Singapore**, in **December 2020** the MAS[18] issued guidelines to improve the management of environmental risks in the banking system.[19] The guidelines, similar in spirit to international entities' recommendations and instructions, address matters of corporate governance, strategy, risk management, and disclosure. **In the UK**, the PRA[20] published a document in **April 2019** that presents the supervisor's expectations of financial entities in managing financial risks originating in climate changes.[21] These expectations, too, focus on the conventional aspects: corporate governance, risk management, scenario analysis, and disclosure. In **November 2020**, a joint team of government officials and regulators, established to promote disclosure in climate-related matters, published an interim report and a roadmap that paved the way toward transforming the TCFD recommendations into mandatory disclosure obligations in the UK by 2025.[22]

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[16] Bank for International Settlements, under which the Basel Committee operates.

[17] The Green Swan—Central Banking and Financial Stability in the Age of Climate Change, BIS & Banque de France, January 2020.

[18] Monetary Authority of Singapore.

[19] Guidelines on Environmental Risk Management for Banks, MAS, December 2020.

[20] Prudential Regulation Authority.

[21] Enhancing Banks' and Insurers' Approaches to Managing the Financial Risks from Climate Change, PRA, April 2019.

[22] UK Joint Regulator and Government Taskforce (TCFD): Interim Report and Roadmap, November 2020.

Box 2.2

The Israel-UAE Peace Accord from a Banking Perspective

- **In the past year, Israel signed peace and normalization of relations agreements with five countries, including the United Arab Emirates (UAE).**
- **The UAE is an international economic hub of trade and finance that has complex regulatory and economic infrastructures. It is composed of seven different emirates, including Abu Dhabi and Dubai, and some forty offshore areas, each with autonomous governance with its own independent legal framework, tax regime, and regulatory rules. The country also has two financial free zones.**
- **The structure of financial supervision in the various parts of the UAE is not uniform. Onshore, it is sectorial and composed of three separate supervisory authorities. In the two offshore financial free zones, the supervisory structure relies on two independent regulators of financial services (one in each zone), each supervising all financial activity in its jurisdiction.**
- **Immediately after the announcement of the establishment of diplomatic relations, Israel and the UAE signed four agreements relating to financial cooperation. The signings were spearheaded by the Ministry of Finance in cooperation with, and with the assistance of, the Bank of Israel and the Banking Supervision Department. The accords give Israeli banks and the Israeli public access to new business opportunities in the fields of trade and investment in a new, unique, and unfamiliar business environment. Along with the opportunities, this exposes the banks and the public to financial risks, including those related to compliance and to anti-money laundering and combating the financing of terrorism (AML/CFT).**
- **To enhance AML/CFT transparency, the Banking Supervision Department sent two letters to the banks expressing its supervisory expectation of cautious and incremental action vis-à-vis the UAE, accompanied by stringent risk management and adequate resource allocation on a scale that will allow them to learn the business environment, get to know the relevant financial institutions, and apply ongoing controls.**
- **Following the cooperation agreements, the Banking Supervision Department began to establish direct and professional channels of communication with its UAE counterparts. Talks also took place between the countries' Supervisors of Banks, with emphasis on an undertaking to remove regulatory barriers in order to simplify and ease the formation of business relations between banks in both countries.**
- **Banking corporations on both sides have also begun to establish professional working relations. Israeli and Emirati banks have concluded memoranda of understanding, promoted measures that allow interbank transfers of funds and support of international trade to take place, eliminated barriers to credit card activity, and so on.**

In the past year, Israel concluded a series of accords that ordained peace and normalized diplomatic relations with five countries, including four Arab countries: the UAE, Bahrain, Sudan, and Morocco,[1] under American patronage and within the framework of the "Abraham Accords." The agreements were concluded some two decades after Israel and the Hashemite Kingdom of Jordan signed a peace treaty. Underlying them is the awareness that the commitment to peace and prosperity should find expression in fulfilling the potential of each of the sides and the entire region. For this purpose, it was determined that

[1] The fifth is the Kingdom of Bhutan.

the parties would strive to enhance their cooperation in various ways including the conclusion of bilateral accords in various civil domains such as, among others, financial services.

In this box, we focus on the United Arab Emirates, the first of the five countries with which financial-cooperation agreements were signed under the leadership of the Ministry of Finance and with cooperation and assistance from the Bank of Israel and the Banking Supervision Department. These accords expose Israeli banks and the Israeli public to new and unique business opportunities in the fields of trade and investment in an unfamiliar business environment. Along with the opportunities, they also expose the Israeli banks and public to financial risks including those relating to compliance and AML/CFT.

The UAE is comprised of seven emirates, of which the largest and most familiar are Abu Dhabi and Dubai. Economic and financial activities in the UAE take place either onshore or in some forty free zones that operate offshore. These zones are dedicated to different areas of manufacturing and services and are autonomously governed, independent of the state authorities. Each zone has its own autonomous and specific legal framework (with the exception of criminal law), tax regime, and regulatory rules, most of which are considerably different from those in effect onshore. The free zones were established to attract foreign investors and enable businesspeople to expand their international activity or relocate their activity without relinquishing control of their companies (as UAE law used to require if they wished to base their activity onshore). In these zones, they enjoy a long-term tax exemption, readily available skilled human resources, and an advanced logistical infrastructure. Among the free zones, there are two financial free zones[2]: DIFC (Dubai International Financial Center) and ADGM (Abu Dhabi Global Market); they are home to strong business-banking[3] and fintech activity.

The various jurisdictions do not apply a uniform structure of financial supervision. While onshore supervision is sectorial and largely reminiscent of Israel's (composed of three separate supervisory authorities, with banking supervision located within the central bank). The structure of financial supervision in the two offshore financial zones is based on two independent regulators of financial services (one in each zone) that oversee all financial activity in their jurisdictions. Supervision of AML/CFT is undertaken autonomously by the supervisory and regulatory authorities that operate onshore and in the financial free zones, and they report to a dedicated function at the central bank (FIU—Financial Intelligence Unit), which gathers and analyzes data on suspicious activities that it receives from the financial supervised entities and regulatory authorities. Supervision of consumer matters resembles Israel's in that the supervisory mandate is assigned to each of the independent regulators.

At the present writing, Israel and the UAE have concluded four cooperation agreements that relate to financial activity. Immediately after the normalization of diplomatic relations was announced (August 2020) and even before the peace agreement itself was signed, the sides inked a financial protocol meant to strengthen bilateral economic relations by promoting cooperation in financial affairs, including banking, investment, and financial services, as well as possible cooperation in AML/CFT. In October 2020, the parties' finance ministers signed a declaration of intent on establishing cooperation in the area of financial services, promoting the adoption of international rules and standards in financial stability, financial integrity, AML/CFT, and fintech by creating a direct channel for dialogue between the sides' financial authorities and regulators. Later, the countries' finance ministries signed an agreement on promotion and protection of

[2] One in Abu Dhabi and one in Dubai.

[3] Financial services firms in these zones are not allowed to operate in local currency and may not accept deposits from UAE residents.

investments and a mutual economic memorandum of understanding meant to strengthen bilateral economic relations, including those relating to financial services and trade finance.

Immediately after the announcement about the formation of bilateral relations, the Bank of Israel and the Banking Supervision Department began to study the UAE economy and the financial supervision structure in the country's various zones. Concurrently, the Banking Supervision Department acted to establish direct channels of communication and professional working relations with its counterparts in the UAE and the two financial free zones. It held a round of getting-acquainted meetings and professional talks with high-ranking supervisory officials on economic topics and specific areas of bilateral interest. The respective Supervisors of Banks held official talks, and talks with the professional echelons in the financial free zones took place as well. The participants in these exchanges stressed all sides' commitment to cooperation and the removal of regulatory barriers in order to simplify and facilitate business relations between banks on both sides and to support international trade.

The BSD published two letters addressed to the banking corporations in Israel[4], emphasizing the complexity of financial and trade activities in the UAE. The letters specify several measures that should be taken to create a reduced-risk activity environment for banks' operations in the UAE[5] and were published in order to enhance transparency and regulation in AML/CFT. The new business environment in the UAE has unique characteristics that the banks must bear in mind as they go about their activity: large amounts of remittances, considerable use of cash in transactions, highly active trade in precious metals, a large proportion of foreign residents, and geographic proximity to countries destabilized by conflict or terrorism, as well as countries subject to UN sanctions.[6] Multiple corporate registrars, and complex structures of incorporation are additional features of the UAE that require attention in all business dealings. The letters, sent out for the purpose of allowing bilateral banking activity to progress, reflects the supervisor's expectation that transactions will be pursued in a cautious and phased manner, accompanied by stringent risk management and allocation of resources that are adequate for learning the business environment, getting acquainted with the relevant financial institutions, and applying ongoing controls.

As soon as the peace accords and the financial agreements were signed, the commercial banks in Israel began to establish working relations with their UAE counterparts. Right after the peace agreement was concluded, delegations from Israel's large banks headed to the UAE; later on, MOUs for cooperation with UAE counterparts were signed. The banks began to promote cooperation in interbank transfers, banking activities, mutual referral of business customers, and opening lines of credit in support of business activity of customers on both sides. Concurrently, barriers to credit card activity were toppled and measures for support and enhancement of potential international trade between the sides were promoted, including conferences with business customers. More complex banking activity is being considered and will be encouraged amid prudent risk management and understanding of the business environment and each zone's specific regulations.

4 "Carrying Out Bank Transfers with Financial Institutions that Operate in the United Arab Emirates," ref. 20LM3378, October 2020 [Hebrew] and "Carrying Out Bank Transfers with Financial Institutions that Operate in the United Arab Emirates—Update," ref. 20LM3378, April 2021 [Hebrew].

5 Particularly in activity ancillary to foreseen bilateral trade, such as bank transfers and issue of guarantees and letters of credit.

6 "Anti-money laundering and counter-terrorist financing measures United Arab Emirates"—Mutual Evaluation Report, MENA FATF, April 2020.

Box 2.3
Issuance of a Central Bank Digital Currency (CBDC) and Its Effect on the Banking System

- **In recent years, many central banks have been examining the possibility of issuing a Central Bank Digital Currency (CBDC). The COVID-19 crisis has expedited the development and adoption of digitization in payment-related contexts and has given central banks added motivation to make progress in the CBDC sphere. This box deals with the Retail CBDC[1], a digital liability of the central bank to the public that holds it and one that can be used to make transactions and preserve value.**
- **Numerous characteristics can be defined for any given CBDC, and the examination of its desired characteristics, with their advantages and disadvantages, has been major part of discussions at central banks and in general. The BIS (Bank for International Settlements) lists three foundational principles that should guide central banks in examining the possibility of issuing a CBDC in their jurisdictional economies. According to these principles, the issuance of a CBDC should not derogate from broader policy targets, the CBDC should co-exist with other means of payment in the economy, and the CBDC should support the advancement of innovation and efficiency.**
- **The BIS clarifies its points, emphasizing that any country considering the issuance of a CBDC should thoroughly examine the potential repercussions of this move for its economy in accordance with the characteristics of the economy's activity.**
- **In 2017, the Bank of Israel, like other central banks, set up a team to study and examine the CBDC topic. In November 2020, in view of the major developments that took place in this field worldwide, the Bank of Israel established a steering committee for the matter in order to produce an action plan that can be implemented if and when a decision to issue a Bank of Israel digital currency is made. After outlining the main benefits of a digital shekel for the Israeli economy, the steering committee put together a draft model that will serve, inter alia, as a basis for discussion in the Israeli professional community.**
- **Issuing a CBDC may also come with considerable risks. One of the main ones is the risk of a negative impact on financial intermediation, which is carried out by the commercial banks, as a result of a shift from bank deposits to CBDC. Central banks use various scenarios ensure the issuance of a CBDC will not harm the financial stability of their economies.**

In recent years, many central banks have begun to examine issuing a CBDC in response, among other things, to the major changes that have occurred in the financial world, technology, and the public's tastes. In its third survey on CBDC[2], (hereinafter: **"the third BIS survey"**) the BIS found that **the COVID-19 crisis has expedited the development and adoption of digitization in the payments world and has given central banks additional motivation to make progress toward a CBDC.** Indeed, in the past two years, and particularly since the coronavirus crisis began, central-bank publications and practical studies, some produced in conjunction with academia and the private sector, have been showing meaningful progress

[1] The accepted terms in the literature are "retail CBDC" or "general purpose CBDC."
[2] https://www.bis.org/publ/bppdf/bispap114.htm

in central banks' preparations for the possibility of issuing a CBDC. **Notably, even if no central bank in any advanced economy has announced a decision to issue a digital currency in the future, the third BIS survey implies that numerous central banks that participated in the survey believe it highly likely that they will issue a retail CBDC at some time in the next six years**.

Digital money is not a new concept; it has existed for decades, as the money that people keep in their bank accounts is digital money of the banking system and various payment instruments, such as payment cards and bank transfers, know how to use this digital money. **The public's trust in the banking system, based among other things on close supervision by the Banking Supervision Department at the Bank of Israel, allows the banking system's digital money to exist properly and efficiently. The main innovation in the evolving discourse concerns retail digital money that the central bank issues for the public to use[3] in addition to physical cash. A retail CBDC is actually a digital liability of the central bank to the public that holds it and uses it to make transactions.** In particular, a CBDC should serve as a means of payment and an adequate substitute for cash; therefore, it should be characterized by the basic functions that cash must have (convenience of use, convenient conversion into bank cash, and so on).

Numerous characteristics may be defined for a specific CBDC, and the examination of the desired characteristics, with their advantages and disadvantages, is a major part of the discussions held at central banks and other institutions (such as universities and development and innovation centers). As a rule, **a CBDC can be given different characteristics in support of different goals, and these characteristics would have different implications for different economies.** In "Central Bank Digital Currencies: Foundational Principles and Core Features," Joint Report no.1 (October 2020), published by the Group of Central Banks (2020)[4], the BIS lists **three foundational principles that should guide central banks when examining the possibility of issuing a CBDC in their jurisdictional economies. These three foundational principles are: the issuance of a CBDC should do no harm to wider policy objectives, the CBDC should co-exist with and complement other payment instruments in the economy, and the CBDC should support the promoting of innovation and efficiency. Later in the same document,** the BIS specifies **fourteen core features that a CBDC should have in order to uphold the foundational principles:**

[3] For the commercial banks, a de facto digital money of the central bank has already existed for decades because these banks have accounts with the central bank, which they credit and debit regularly.

[4] The report was written by the BIS in conjunction with seven central banks: those of the US, Eurozone, Japan, UK, Canada, Sweden, and Switzerland. https://www.bis.org/publ/othp33.htm

Core features of a CBDC		
Instrument features	System features	Institutional features
Convertible at par with cash and private money.	Secure and resistant to cyber attacks and counterfeiting	Clear and robust legal framework
Easy and convenient to use	Instant or near-instant final settlement	Compliant with and updatable to regulatory standards, so that player in the CBDC system will meet regulatory standards as do players that offer similar services in standard money
Accepted and available	Extremely resilient to operational failure and disruptions in routine times and in emergencies	
Low cost	Fully available 24/7/365	
	Throughput—it should be able to process a very high number of transactions per second	
	Scalable—it should be able to expand commensurate with the economy's changing needs	
	Adequate interaction with the other payment systems	
	Flexible and adaptable to changes in policy	

Clarifying these points, the BIS emphasizes that any country considering the issuance of a CBDC should thoroughly examine the potential repercussions of this move on the financial stability of its environment. Namely, **when a central bank considers the impact of issuing a CBDC, it should outline the features that support its goals and examine the effect of these characteristics on its jurisdictional economies in accordance with the specific characteristics of the jurisdictional economy's activity** (such as the extent of its use of cash, the size of its unreported (shadow) sector, the development and extent of adoption of digital means of payment, and the structure of its banking system's sources).

While central banks turn with growing intensity to the examination of CBDCs and their implications, **the field of private digital currencies has also seen major progress in recent years.** The attention that began with Bitcoin as a totally distributed and seemingly anonymous private currency, that offers an alternative to existing payment instruments, has spread to additional private digital currencies. In reference to this, it should be noted that **these currencies, which are traded in various markets, are not backed by any sovereign entity, they are considered neither currencies in general nor legal tender in particular, and they suffer from severe price volatility. Therefore, for the time being, they do not serve the public as a payment instrument as in its traditional definition. Consequently, another type of cryptographic currency called**

"stablecoins" has evolved. A G7 working group that was set up to examine the topic[5] defined "stablecoins" as currencies that use cryptoassets technology and seek to stabilize the price of the "coin" by linking its value to that of stable assets (e.g., linking to the local currency or backing it with deposits in banks.)[6], and one of the central features of such "coins" is the maintaining of a stable value. In this way, the **stablecoins offer an effective alternative to domestic means of payment and for cross-border transactions, as they are not intended to replace the stable asset to which they are indexed, but to be a complementary, sometimes more effective, payment instrument for transactions of various kinds.** Significant public use of stablecoins has not been observed so far, and these instruments, like the other private digital currencies, do not yet qualify as a currency under the traditional definition. **A major difference between stablecoins and a CBDC lies in the risks that pertain to each. Holding a stablecoins (issued by a private entity) comes with various risks, such as insolvency risk, market risk, and liquidity risk, that do not exist when a CBDC (which is backed by a central bank, of course) is held.**

Main benefits of issuing a Bank of Israel digital currency

In 2017, the Bank of Israel, like other central banks, set up a team to study and investigate the topic of CBDC and stablecoins. In November 2018, the team published a final report on its work to that time.[7] Since then, as detailed above, major developments in this field have occurred abroad, as well as technological and regulatory developments in the world of payments. These developments prompted the Bank of Israel to accelerate its study and its theoretical and practical research ahead of the possibility of issuance a Bank of Israel digital currency in the future.[8] **Accordingly, in November 2020 the Bank of Israel established a steering committee on this topic (hereinafter: the Steering Committee) with the goal of drawing up an action plan for implementation at some future time, if ever, should a decision to issue a digital shekel be made.** In May 2021, the Steering Committee published a report titled "A Bank of Israel Digital Shekel—Potential Benefits, Draft Model, and Issues to Examine"[9] (hereinafter: "The Bank of Israel digital shekel report"), accompanied by a "public consultation document" for submitting responses regarding relevant aspects of the possible issuance of a digital currency by the Bank of Israel in the future. **The Steering Committee outlined the main benefits[10] that a Bank of Israel digital shekel, if one is issued in the future, may offer the Israeli economy, in view of developments in the economy and in the domestic and global payment array. We briefly specify these benefits (for elaboration, see the full Bank of Israel digital shekel report):**

- Creating another efficient, advanced, and secure alternative to existing and new means of payment in the digital age
- Creating an innovative infrastructure that will ensure the adaptation of the payment system to the needs of the future digital economy.

[5] An international economic organization also known as the organization of industrialized states, comprising the US, Canada, Japan, Germany, France, Italy, and the UK.

[6] For elaboration, see https://www.bis.org/cpmi/publ/d187.htm

[7] https://www.boi.org.il/en/newsandpublications/pressreleases/pages/6-11-18.aspx

[8] Importantly, like many other central banks, the Bank of Israel has not yet decided whether it intends to issue a digital currency.

[9] https://www.boi.org.il/en/NewsAndPublications/PressReleases/Pages/11-5-21.aspx

[10] Importantly, some of these benefits, if not all, may also be attained by improving and ameliorating existing payment systems, obviating the need for a Bank of Israel CBDC. Some of the Steering Committee's work focuses on examining the added value of a CBDC relative to existing and future payment systems.

- Ensuring adequate redundancy of the payment system and proper functioning of the system during emergencies or mishaps
- Creating an efficient and inexpensive infrastructure for cross-border payments
- Maintaining the public's ability to use digital means of payment while ensuring a certain level of privacy
- Supporting government policy to reduce the use of cash as part of the war on the "unreported economy."

As noted, these are main benefits that were mapped as relevant for the issuance of a Bank of Israel digital currency. The issuance of such an instrument for another economy may have additional or other benefits and motivations commensurate with the economy's characteristics.

Beyond listing the benefits for the Israeli economy, the Bank of Israel digital shekel report sets forth a draft model for a Bank of Israel digital currency, albeit in general lines only. **One of the goals of publishing the draft model is to update the professional community in Israel (those in the payment, finance, and technology sectors; academia; relevant government entities; and sundry organizations) and to create a basis for discussion among those entities of the characteristics that a Bank of Israel digital currency should have.** (For broader and deeper discussion, see the Bank of Israel digital shekel report.)

The impact of issuing a CBDC on the financial system

As noted in the Bank of Israel digital shekel report, issuing a CBDC may come with major risks—foremost bank disintermediation risk:[11] Commercial banks use the public's deposits as a source for their liquidity and for extending credit. If the public chooses to convert a large portion of its bank deposits into CBDC, the banks' ability to do their basic job (intermediating between savers and borrowers) may suffer.[12] In addition, if the scope of public deposits with the banks declines because some portion of these deposits switches to the CBDC, the banks will be able to raise their interest rate on deposits in order to mitigate their loss of deposits or can raise alternative sources for lending purposes. The result in both cases, however, will be an increase in the cost of sources for the banks and the possibility of pushing up the price of bank credit. **Additionally, the more extensive the switch to the CBDC will be, the more the potential the CBDC will have to serve as an alternative payment instrument to those existing today, particularly in reference to payments based on credit cards.** In such a case, the banks' income from fees and other payment-related activities is likely to suffer. Notably, in an extreme scenario of fear for the stability of one bank or another, the ease of switching from bank money to a central bank digital currency may exacerbate the crisis at the affected bank and throughout the whole banking system. Although depending on the legal framework that each jurisdiction will establish, banks and credit-card companies may also be able to serve as financial service providers in the CBDC ecosystem, even in such a case, the risks noted above will continue to exist, albeit at lower intensity.

In a simulation performed on data from the Swedish economy,[13] where the adoption of digital payment instruments is one of the fastest in the world, the potential rate of decrease in the profitability of one of the

[11] Additional risks exist, such as cyber risks, privacy risks, central-bank reputation risk, and more.

[12] Issuing a CBDC may also affect the credit-card companies in terms of both their issuance and their settlement activity. Due to space limitations, however, these cannot be analyzed in this box.

[13] https://www.bankinghub.eu/innovation-digital/central-bank-digital-currency

country's largest banks was tested. The test was based on different levels of CBDC adoption by the public and assumed that the prospective CBDC has cash-like features, namely, it is a retail CBDC that does not bear interest. The level of acceptance of the CBDC was measured as the percent of transactions executed in CBDC out of total transactions in the economy. The simulation also took into account that the strength of the effect of the level of CBDC adoption on the bank's profitability is contingent on the payment methods that the CBDC would replace. **The payment methods that, when replaced, might impair the bank's profit the most are those relating to payment cards, which generate income for the bank from card fees and interchange fees on account of those transactions and bank transfers that generate fee income for the bank.** The simulation shows that if the adoption rate of CBDC comes solely from replacing all transactions in which payment is made by bank transfer, with the extent of the decline in the bank's sources kept commensurate with the extent of CBDC adoption, the blow to the bank's revenue—in the context of the Swedish bank examined—may come to 1 percentage point at a 5 percent adoption rate of CBDC. Thus, an acceptance rate of 10 or 15 percent would reduce the bank's profit by 200 or 300 basis points, respectively. In addition, the **larger the share of credit cards in the replaced transactions, the more severe the detriment to the bank's profit will be. The Swedish economy, as noted above, is characterized by a very high acceptance rate of digital payment. In an economy with a lower acceptance rate, the blow to profitability due to switching of transactions from other payment instruments to the CBDC system would also be weaker.**

The Bank of Canada also performed an analysis to test the intensity of the expected harm to the profitability of the country's six largest banks due to the adoption of a CBDC by the public.[14] For the purposes of the analysis, three possible scenarios of the extent of CBDC adoption were examined, and again it was assumed that the central bank digital currency is retail and pays no interest. To differentiate among the scenarios, several variables were tested, such as the extent of demand for cash, current-account balances, and liquid bank deposits. One of the scenarios even assumes that household customers choose to forgo the interest on their savings; this actually points to an extreme scenario in which the public loses its trust in the banking system. In addition to these scenarios, the Bank of Canada performed sensitivity tests on the extent of the increase (in basis points) in the effective interest rate on retail deposits, such that relative to each scenario the effect was tested relative for increases of 25, 50, and 184 basis points in the relevant interest rate.[15] It was found in the analysis that a 5 percent decrease in net income is foreseen in only three of the nine cases and it occurs only when the rate of CBDC adoption is high and the increase in the effective interest rate on deposits is high as well. **In general, the analysis showed that Canada's six largest banks could absorb the potential shock despite a temporary decrease in their profitability.**

In this context, it is noteworthy that even stablecoins, which are issued by private entities, can affect a banking system similarly. In such a case, however, commercial banks can decide to issue stablecoins of their own for their customers[16], backed by the banks' deposits, and thereby manage the risks inherent in the effects specified above. In the case of issuance of a CBDC, in contrast, the sole issuer is the central bank, such that a commercial bank's option of operating on its own would be much more limited.

[14] https://www.bankofcanada.ca/2020/07/staff-analytical-note-2020-15

[15] The 184-point increase examines an extreme situation in which the effective interest rate on deposits comes in Sweden in the fourth quarter of 2018 to the level of the effective interest rate on wholesale deposits.

[16] Examples are Signature Bank, which established the SIGNET payment system, in which each unit of payment is backed by a unit of US$ held in deposit with the bank: https://www.signet.com. Another similar example is JP Morgan's JPM Coin: https://www.jpmorgan.com/solutions/cib/news/digital-coin-payments