



BANK OF ISRAEL

Financial Stability Report

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1. INTRODUCTION AND HIGHLIGHTS

1.1 The framework and structure of the report

The Bank of Israel's Financial Stability Report is published twice a year. In the report, the Bank's economists analyze the risk channels (or risk groups) in the financial system and their level of vulnerability, provide their assessment regarding the main risks, and examine the system's resilience to those risks, in accordance with the potential stress scenarios.

The final assessment regarding the economy's level of financial stability is based on the aggregated conclusion regarding the three pillars (Figure 1). The assessments and analyses in the report are based on a review of economic and financial developments, an examination of the structural characteristics of the financial system, use of analytical models (including simulations and stress tests) and the findings of the Financial Stability Monitor. The report presents the risks that could significantly affect the economy in the short and medium terms should they materialize, with the goal of enhancing awareness of them among policy makers and the public, and enabling suitable preparations.

1.1.1 Risk Channels

The vulnerability of the financial system overall, as noted, is derived from the level of vulnerability of the main risk channels. The following are the major channels that are analyzed in this report¹:

Macroeconomic environment: The domestic and global macroeconomic environments' impact on economic activity and on the resilience of the various financial system participants. To the extent that this environment is more stable and forecasts for the future are positive, the vulnerability of the financial system is lower.

Asset prices: The vulnerability of the financial system will increase if, in the environment in which it operates, asset prices diverge from fundamental conditions or from their long-term trend, or if prices change as a result of underpricing of risks. In such an environment, there is heightened risk of a sharp correction in prices of financial and/or real assets, which is liable to adversely affect the financial system.

Credit: A high level of credit taken on by households and the business sector exposes them to risks that derive from declines in economic activity or asset prices, among other things. High debt levels and credit usage also affect the financial system's level of vulnerability.

Liquidity: Liquidity is a channel through which external and internal shocks are liable to develop into a financial crisis. The higher the level of liquidity in the markets, the more assets can be traded, with smaller loss of value. The level of liquidity at banks and in the business sector determines their ability to deal in the short term with shocks in cash flows and in economic activity.

Interconnectedness: The interconnectedness among and within financial and real entities. The level of interconnectedness inside and outside the financial system determines the extent of contagion of shocks to the overall system. High interconnectedness increases the vulnerability of the financial system.

¹ There are additional channels with different levels and probabilities of impact on the level of vulnerability. The Financial Stability Report highlights the most important ones.

1.1.2 The shocks that threaten the financial system, risk scenarios

Financial stability is determined according to the relevant risk scenarios, given the environment in which the financial system operates, the risk channels, and the vulnerability of those channels. The choice of risk scenarios and estimation of the risk of their realization are based partly on subjective judgement and are influenced by numerous background factors. The Bank of Israel constantly monitors both global and domestic developments, and keeps abreast of surveys written by both international and domestic economic institutions, with the goal of obtaining a broad spectrum of perspectives and opinions. Furthermore, the Bank of Israel analyzes the public discourse (by monitoring both conventional and social media) and monitors the various sentiment indices (both global and domestic). The main risk scenario in this report is an increased negative impact on the financial system during the COVID-19 crisis, and the realization of a second wave of in the second half of 2020.²

1.1.3 Resilience of the financial system's components

According to the model presented in Figure 1, the stability of the financial system is ultimately dependent on the resilience of its components to external shocks that arrive via the risk channels. The two main components of the financial system are the banks and the insurance companies. In this section, we analyze the capital ratios, leverage, operations, profitability, repayment ability, and strengths and weaknesses of the banks and insurance companies. We also examine the impact of regulatory and environmental changes on their resilience.

1.2 Challenges in the face of the COVID-19 pandemic

The COVID-19 pandemic and its results have presented—and continue to present—unprecedented challenges with respect to caring for patients and protecting public health, supporting (real) economic activity, and maintaining the stability of the financial system. Within the array of parameters that decision makers need to consider during the crisis, the issue of saving life has been the leading consideration and has determined the policy measures adopted. However, the means required to limit the spread of the virus have caused a dramatic decline in economic activity and have had a major impact on volatility in the financial markets and the stability of the components of the financial system. As a result, the growth forecasts for 2020 both for Israel and globally changed rapidly from an upward trend to one of sharp contraction, with a loss in output that is expected to be on a larger scale than during the Global Financial Crisis of 2008–09. Nonetheless, even today, as of the end of the reviewed period, the forecasts incorporate a great deal of uncertainty as to the overall impact of the crisis, as well as the timing of the recovery.

The COVID-19 crisis represents the realization of risk and constitutes a threat to the stability of both the global and domestic financial systems. The financial conditions, which tightened with unprecedented speed following the outbreak of the COVID-19, have revealed a number of cracks in the dynamics of the financial markets and the extent of vulnerability of the risk channels. The volatility in the global markets and the cost of credit have risen considerably due to the upward revision of the probability of bankruptcy among businesses and households. An increase in risk

² This report does not present an objective evaluation of the likelihood of realization of geopolitical risks in the region (an escalation in the security situation) and/or cyber threats. Nonetheless, we believe that such shocks have a particularly high potential for causing a negative impact on the real economy and the functioning of the financial system. The (prolonged) realization of a geopolitical/security/cyber scenario is expected to have a major impact on economic stability, which will be added to the impact of the realization of the main risk scenario (COVID-19).

and liquidity premiums in the primary and secondary markets has contributed to a rise in the costs of raising capital. Historically large capital outflows have accelerated and amplified the shocks in the emerging markets. The major economies have not been immune. They have been forced to significantly cut back their economic activity, and have also slid into recession during the periods of quarantine and lockdown. These events have raised the risk of borrowers' inability to service their debt in the short and intermediate terms, they have increased pressure on the financial institutions, and they have raised fears that nonbank sources of credit will dry up and that bank credit will be rationed. Continued disruption of market activity is liable to create distress among the financial institutions; increase the possibility of a credit crisis and thereby exacerbate the declines in the markets and in real economic activity; and delay the recovery significantly.

In order to maintain the stability of the economy and the financial system, and to prevent negative feedback effects, many countries—including Israel³—have taken preventative measures (see Box 1). Regulatory authorities and governments have supported households and companies by means of available fiscal measures and have focused them on limiting the number of business and household failures by deferring debt repayments and providing guarantees and guaranteed credit. Central banks have eased monetary policy even further and have acted to lower interest rates and increase liquidity in the financial system by various means (providing credit to the banking system, providing foreign currency by way of swaps, acquisition of government bonds, regulatory exemptions, etc.). Due to these efforts, the capital and financial markets have continued to function, and sentiment among the major participants is showing signs of improvement. Supervisors and financial regulators have encouraged the banks to carefully examine the credit conditions of their customers who are having difficulty in servicing their short-term and intermediate-term debt (Box 1). This is in order to help them get through the period of uncertainty in economic activity and enable them to use existing capital and liquidity reserves. In addition, there has been flexibility in the areas of regulation and accounting treatment in order to absorb the expected losses. These measures were essential in order to ensure that the transitory negative shocks to the production function and economic activity do not result in long-term damage, and they are intended to prevent harm to the financial system and the social fabric.

Asset prices rose as the restrictions were lifted in most countries, thus offsetting the price declines at the beginning of the year to a large extent. Simultaneously, with the lifting of restrictions, accommodative monetary measures were adopted that led to a major easing of financial conditions. The rapid, determined, and multifaceted response by the central banks produced positive sentiment and a feeling of certainty in the markets, including in the developing economies, which for the first time implemented asset purchase programs. Nonetheless, under the still-prevailing conditions of uncertainty, a gap has become apparent between observed financial-market conduct and trends in the real economy, a phenomenon that is liable to significantly increase the impact of the overall crisis. This constitutes a threat to the scope and rapidity of the recovery, with the expected dampening of risk appetite among investors (GFSR, June 2020). The high debt levels are liable to be unmanageable for some of the borrowers, and the resulting losses may constitute a major test of the resilience of the banking system in some countries. Once the pandemic comes under control, decision makers will need to focus on the recovery and repairing the damage to the balance sheets of households, companies (the business sector), financial institutions, and the government. The goal will be

³ It is worth mentioning the main steps taken by the Bank of Israel with respect to monetary policy and financial stability. The Bank injected liquidity totaling \$15 billion in order to moderate depreciation pressures in the foreign exchange market; carried out a NIS 50 billion program for the purchase of government bonds in order to lower the interest rates in the economy; and provided liquidity to financial institutions to maintain the normal functioning of the financial markets. The Bank's Monetary Committee reduced the interest rate by 0.15 percentage points, to 0.1 percent. The Bank has provided NIS 5 billion in low-interest monetary loans to the banks, conditional on the provision of credit to small and micro businesses. With respect to the banking system and the credit market, about NIS 6 billion in payments on mortgages and other loans have been deferred. Capital requirements have been lowered and dividends have been halted to allow the banks to increase the amount of credit available to the public. Regulatory and accounting exemptions have also been utilized to expand credit facilities. Finally, there has been a suspension of restrictions due to checks with insufficient cover.

to reinforce the resilience of the financial system, provide support for its stability, and encourage economic activity.

1.3 Main points

The COVID-19 pandemic, which broke out during the reviewed period, presented an extreme challenge to the financial system, and it appears to have even gone beyond the stress scenarios⁴ selected for the banking system over the years.⁵

Due to the solid state of the economy prior to the crisis—characterized by historically low unemployment rates, continued growth above its potential rate, the high level of resilience in the financial system, and close supervision of the financial system⁶—the financial system, at this point in time, is coping with the event and continues to function. However, the configuration and pace of the recovery from the crisis are critical. A lack of employment security, high rates of unemployment, and uncertainty in the labor market will lower the public's expectations of their future income, and this can be expected to lower demand in the economy. The erosion of the public's wealth as a result of the declines in financial asset prices, is also expected to negatively impact private consumption in the economy. Investment by the business sector, which was low even prior to the crisis, is not expected to improve, and the impact of global trends on foreign trade will continue to restrain the Israeli economy even if it recovers relatively quickly.

One of the more interesting phenomena during the reviewed period is the gap between the macroeconomic data—which point to a real economic downturn that has not been seen for many years in Israel or abroad—and the rapid recovery in the financial markets. Against this background, there is a vigorous discussion of the shape that the recovery will take (W, V, U or L). The shape and duration of the recovery, the pace of the lifting of restrictions both in Israel and abroad, and whether there is a second round of restrictions—all of which are primarily dependent on the course of the pandemic—will have numerous and clear effects on the real economy. However, the relatively rapid recovery in the financial markets seems to point to a divergence between the financial markets and real events. This recovery can be explained, in the best case, by investors' optimism with regard to the future or, in a more pessimistic case, by the particularly high levels of liquidity that are being injected into the markets by the central banks worldwide, which is supporting the functioning of the markets but is also incentivizing the underpricing of risk. If the scenario of a continuing spread of the pandemic and a further round of lockdowns both in Israel and abroad is realized, it is not out of the question that further asset-price declines will be observed, and in such a case it is reasonable to assume that there will be additional policy responses by the central banks and governments.

In the early stage of the COVID-19 crisis, the uncertainty as to the severity of the pandemic generated a major shock to the dynamic of the financial markets, thus creating a liquidity shortage in the major markets and raising concerns about the continued provision of credit by the financial institutions. In response, the Bank of Israel took a number of steps intended to restore full functioning of the markets, to ensure that the financial institutions have sufficient liquidity, and to provide households and businesses with access to credit. From a short-term perspective, it can be said that the steps taken by the Bank of Israel, against the background of the steps taken worldwide, managed to eliminate much of the panic in the markets and restore their proper functioning (for further details on the Bank of Israel's steps, see Box 1).

⁴ A pandemic scenario was examined in the past for the banking system.

⁵ If there is no second round of restrictions like those of the previous lockdown, then the COVID-19 pandemic, despite its severity, will be short-lived relative to the stress scenarios that were examined for the banks, which were, as mentioned, less extreme but of longer duration. The severity of the crisis will be measured by the period of time until the economy's return to full functioning.

⁶ See the *Financial Stability Reports* for the two previous periods (12/2019 and 6/2019).

Main points (according to the components of the Financial Stability Monitor)

- There has been a major economic slowdown as a result of the spread of the COVID-19, which has encompassed most sectors of the economy and households. The government has adopted fiscal policy measures to minimize the damage to the business sector and households. At the same time, there has been a steep decline in tax revenues due to the drop in economic activity. As a result, and in view of the additional expenditure on assistance needed by the victims of the crisis, the government deficit is expected to reach about 13 percent of GDP by the end of the year and the debt-to-GDP ratio is expected to reach 77 percent. The Bank of Israel has adopted several exceptional measures, including large purchases of government bonds, the provision of liquidity in foreign currency, and the initiation of a program to provide loans to the banks on condition that the funds are used as sources of financing for small businesses.
- The level of macroeconomic uncertainty is particularly high, primarily due to the rate of spread of the virus in the second wave, the scope of the restrictions imposed on the economy, and the pace of return to routine. The forecasts of growth and unemployment are being revised frequently, as a function of the decisions regarding the exit from the lockdown, both in Israel and abroad. According to the Bank of Israel Research Department's forecast⁷, GDP in 2020 will contract by 6 percent and the GDP growth rate in 2021 will be 7.5 percent. According to this forecast, the unemployment rate will be 9 percent at the end of 2020 and 6 percent at the end of 2021.
- The COVID-19 pandemic led to sharp declines in the prices of securities on the Tel Aviv Stock Exchange, and since the end of March, prices have not returned to precrisis levels despite the recovery. Alongside the sharp price declines, there were large withdrawals from mutual funds, and in response they sold large quantities of low-liquidity assets. This was later halted, partly in view of the measures taken by the Bank of Israel in the markets. The withdrawals were minimal from long-term savings, the majority of which belong to the public. Home prices, which continued to rise prior to the crisis, will be affected by the situation of households and the impact of the COVID-19 pandemic on the level of activity in the housing market, among other things.
- Due to the sharp drop in business activity and employment as a result of the COVID-19 crisis, there was an increase in the risk of nonfinancial business credit (which is equal to 68 percent of GDP) and of household credit (which is equal to 42 percent of GDP). The increase in the risk of business credit is primarily centered on industries that are more exposed to the crisis, including real estate companies, which account for a high share of business credit. In the financial statements for the first quarter, the banks increased their allowance for credit losses to rates of up to 1.42 percent of their credit portfolios.
- Due to the crisis, and with the encouragement of the Bank of Israel, the banks approved requests by households and businesses to defer loan repayments. Overall, payments on about 14.6 percent of the banks' credit portfolio were deferred.⁸
- The banks' allowances for credit losses (based on first quarter statements, which were published in May), at rates of up to 1.42 percent, indicate that in their assessment this is the "adverse impact of the crisis"—a rate that can be included without adversely impacting the financial system. However, it should be taken into account that debt holders of about 15 percent of the bank credit portfolio requested to defer payments due to the crisis, and thus, at least some of them are only postponing dealing with the problem. It is clear that the credit deferred is subject to enhanced risk, and therefore, the starting point of the second wave of restrictions, if it occurs, already incorporates risks.
- The Israeli banking system was in a good position at the start of the COVID-19 crisis. The banks' credit portfolio

⁷ Released on July 6, 2020. This forecast is based on the assumption that there will not be an additional lockdown.

⁸ As of the end of June 2020.

has grown in recent years and has undergone a change in composition that reduced the banks' credit risk. However, the crisis is expected to bring about a realization of both market risk and credit risk, which would lead to a drop in the banks' profitability and an increase in loan loss provisions. On the other hand, the liquidity of the Israeli banks is high and is based on stable and diversified retail deposits.

- According to assessments made by the five insurance companies, there are no major insurance exposures to the COVID-19 pandemic with respect to general insurance and long-term savings. Nonetheless, according to their reports they expect a loss of about 2 percent in their nostro portfolios, which was almost completely offset by the price increases in the capital market since the end of March.
- Liquidity risk in the financial markets was manifested during the crisis in the sale of large quantities of financial assets by mutual funds that manage assets with a short-term horizon—primarily government and corporate bonds—where the supply of buyers was limited. The acquisition of government bonds by the Bank of Israel helped to provide liquidity and to calm the market.
- The risk of contagion in the domestic financial system has increased. The market-based indices pointed to a sharp increase in interconnectedness during the crisis, although at lower probabilities than those observed during the Global Financial Crisis of 2008. The indices based on financial statements and accounting information, which reflect the direct and indirect exposures of the financial system, have increased slightly to around their long-term average.
- The main and most imminent risk scenario is a second wave of lockdown restrictions, and with it a further increase in the severity of the adverse impact on economic activity. The implications of such a wave include an adverse impact on borrowers' repayment capacity, particularly borrowers who deferred their repayments; the need for another wave of government incentives, the implementation of which will lead to a deterioration of the fiscal situation; a further increase in uncertainty; and further asset price declines.

The second part of this report consists of boxes that present selected issues related to the pandemic. They analyze the situation of borrowers (households and the business sector), the banks' sensitivity to various scenarios regarding the situation of borrowers, and the effect of the crisis on the corporate bond market.

Summary of the main points in these boxes:

- Prior to the COVID-19 crisis, households were in a relatively strong position, reflected in the prolonged and significant upward trend in the labor market. Despite the growth in credit in recent years, the quality of the lenders' credit portfolio was also high, particularly in the case of bank credit. The crisis severely affected employment and wages, with the weakest populations in the labor market being the most affected. The reduced earning power of many households is liable to threaten their resilience and to present a challenge to the financial system.
- At the peak of the crisis, bond prices reflected a pessimistic outlook, according to which about one-quarter of the companies would not be able to repay their debts according to the terms of their bonds and would default. Mutual funds, which prior to the crisis accounted for about one-third of the corporate bond market, experienced high net withdrawals during the crisis, which forced them to sell bonds. As a result, a large supply came on to the market, which was among the factors behind the decline in bond prices. In contrast, long-term savings institutions increased their holdings, although not sufficiently to offset the supply from the mutual funds. Apart from this, many companies announced large-scale plans for the buyback of bonds, thus sending a positive signal to the market. However, the level of their actual purchases by the end of May 2020 was relatively low. Between March and May 2020, the two domestic rating agencies lowered their ratings on 23 companies (about 12 percent of the rated companies prior to the crisis), although most of them retained their investment grade status according to the local

rating scale. In other countries, the reduction in rating was on a relatively larger scale during the same period. As of July 5th, 2020, the yield on bonds of about 23 percent of companies, which account for about 13 percent of the par value of bonds on the Tel Aviv Stock Exchange, were still at double-digit levels. On July 6th, 2020 (after the period reviewed by this report), the Bank of Israel announced that it would purchase NIS 15 billion of corporate bonds in the secondary market. On that same day and on the subsequent day, the Tel Bond 60 Index rose by 2.6 percent and the General Corporate Bond Index rose by 2.5 percent. In the days following the announcement, the issuing of corporate bonds in the primary market also increased, primarily by nonfinancial companies (see Box 3: "Developments in the corporate bond market during the crisis").

- Various simulations of the crisis applied to the financial statements of public companies, as well as an analysis of those financial statements, lead to a number of conclusions. First, the probability that a company experiences cash flow and capital difficulties in 2020 increases for companies that are smaller, more leveraged, or have lower relative market value. Thus, about 70 percent of the 286 public companies that were analyzed are not expected to experience any cash flow problems and/or a serious threat to their capital in 2020, even in a scenario of a return to the stringent restrictions that prevailed in the economy at the beginning of the crisis. Second, the companies that are expected to face liquidity problems or a significant reduction in their capital in the extreme scenario have financial debt of about NIS 50 billion. Third, the corporate bond market is pricing the risks reflected in the companies' fundamentals according to the forecasts presented in the box (see the box "Analysis of the resilience of public companies during the COVID-19 crisis").
- Sensitivity tests carried out for the banks on the basis of the various scenarios for credit losses show that in the scenarios of medium severity (relative to the situation today) the banking system in Israel will remain stable, but will approach its minimum capital targets. They also point to the centrality of households and small and mid-sized businesses (see the box "Sensitivity tests for the banks in Israel").
- As a result of both the government decisions to impose restrictions on gatherings and the closing of businesses, the rate of credit card transactions in which a physical card was not presented at the point of sale (telephone transactions, Internet transactions, etc.) rose between March 10th and April 28th. The average size of a purchase paid for in installments and using credit from the card issuer declined during the period of the crisis to below the average observed prior to the crisis (see the box "Use of payment cards during the COVID-19 crisis").

2. Risk channels (focal points of vulnerability) – The Financial Stability Monitor

To estimate the scope of the exposure to risk in the economy (total vulnerability) and to understand the changes in that exposure, we use the Financial Stability Monitor. The Monitor (the heat map) is a statistical tool that estimates⁹ the levels of vulnerability of the risk channels on an ascending scale that is indicated by colors. This tool is based primarily on the location of the current value relative to the long-term behavior of the indicators in each channel. An analysis according to its main components is accompanied by quantitative estimates and robustness tests, such as stress tests and macroprudential monitoring. We are continuing to develop and revise the Monitor according to the evaluation of its performance (its predictive ability) and an analysis of new indicators, data, and statistical tools. The Finance Division of the Bank of Israel Research Department makes revisions to the Monitor every quarter and presents the changes in risk and in the vulnerability of the financial system. In this way, it directs the attention of policy makers and of participants in the system to risks and the need to adopt policy measures to regulate them. We

⁹ For further details, see: Noam Michelson and Konstantin Kosenko, "The Financial Stability Monitor in Israel", Discussion Paper 2020.02, Bank of Israel.

emphasize that the Monitor does not generate conclusions regarding the stability of the system.¹⁰ Such conclusions require the use of judgement and should take into account a wider array of quantitative and qualitative information than can be included in the Monitor.

The Monitor analyzes the environment in which the financial system operates, according to the main risk channels through which the system is affected in the event of a realization of the risk scenarios: the macroeconomic channel and the global environment in which the Israeli economy operates; the asset market channel (financial assets and homes); credit in the economy (both business and consumer credit); connectedness between the financial institutions and the business sector (the contagion channel); and the liquidity channel. Each risk channel is assigned an estimate of the level of vulnerability according to the color scale. The color is determined on the basis of the performance of a group of indicators.¹¹

The general risk¹² to the stability of the financial system in Israel during the first half of 2020 increased due to the weakness in the components of the economic system and the weakening of buffers as a result of the COVID-19 crisis. The estimated level of exposure to risk in the economy is based on combining the exposure intensities for the five main risk channels: macroeconomic, the markets, credit, liquidity, and interconnectedness (the potential for contagion). In the following sections of the report, we will describe the findings that underlie the summary evaluation.¹³ Figure 1 summarizes the Finance Division's assessment of the level of financial stability during the first half of the year. The level of risk to financial stability during this period was estimated to be intermediate to high.

Figure 1: The process for evaluating and analyzing financial stability¹⁴



¹⁰ The Monitor is not intended to provide an early estimate of the probability of a stress event such as the Global Financial Crisis of 2008–09 or the COVID-19 crisis (a systemic crisis).

¹¹ In this report, the colors of the risk channels are based primarily on the Monitor. In other words, the colors are based on statistical tools and quantitative estimates. Nonetheless, in certain cases (such as systemic crises), manual intervention is required to obtain an up-to-date and overall picture of the development of risk in the system. In these cases, the most recent observations can be fed into the indicators even if the reporting frequency is not aligned with that chosen for the overall presentation (i.e., quarterly frequency).

¹² General risk is defined as the total level of vulnerability.

¹³ The vulnerability of the risk channels is presented according to its severity, from the lowest (dark green) to highest (burgundy).

¹⁴ The Monitor is a heat map that includes 51 indicators of possible vulnerabilities in the Israeli financial system. The indicators are organized and categorized according to six main risk categories (risk channels: macroeconomic, the assets market, credit, redemption and leverage, financing and liquidity, and contagion (Table 2)). The colors of the heat map indicate the level of vulnerability reflected in each risk channel relative to its long-term history (according to an aggregate of indicators and the extent of the vulnerability of the components of each channel). The closer the color is to burgundy the greater the potential vulnerability, while the closer the color is to dark green the lower the potential vulnerability. The score, and accordingly also the color (the vulnerability), are calculated and revised on a quarterly basis. (For further details, see: Noam Michelson and Konstantin Kosenko, “The Financial Stability Monitor in Israel”, Discussion Paper 2020.02, Bank of Israel.) The color grey indicates that there is no quantitative data, that the series is not sufficiently long, or that it is still being developed.

Table 1: Vulnerability level of the various channels according to the Financial Stability Monitor

<u>Risk channels/period</u>	2019:2		2020:1
Macro			
Asset market			
Credit			
Liquidity			
Interconnectedness			
Resilience			



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
MACRO RISK																									
Inflation risk																									
Core inflation																									
Inflation expectations																									
Fiscal risk																									
Government balance/deficit / GDP																									
Government debt / GDP																									
Government inter. exp. payments / GDP																									
External balance risk																									
Current account / GDP																									
Foreign currency debt / GDP																									
N. USD option implied std. dev.																									
Activity																									
GDP-growth forecast - Israel																									
hours/tourism																									
unemployment rate																									
Global economy risk																									
GDP-growth forecast - Global																									
World trade growth forecast																									
Government bonds yield curve slope 10Y - 1Y																									
Market risk																									
House price / average salary																									
House price / rent																									
Non-financial sector average corporate bond duration																									
Non-financial sector average corporate bond spread																									
Public firms net income multiplier																									
VIX FAS																									
CREDIT RISK																									
Household credit risk																									
Household non-residential debt / GDP - deviation																									
Household non-residential debt / net income																									
Household residential debt / GDP																									
Household residential debt / GDP - deviation																									
Household residential debt / net income																									
Nonperforming loans / total loans - non-residential credit to households																									
Nonperforming loans / total loans - residential credit to households																									
Share of new mortgages with PIT over 50%																									
Share of new mortgages with PIT over 30%																									
Non-financial sector																									
Non-financial business sector debt / GDP - deviation																									
Nonperforming loans / total loans - business sector credit (without real-estate and construction)																									
Nonperforming loans / total loans - real-estate and construction sector credit																									
Public firms debt service coverage ratio																									
Public firms debt to income ratio																									
Public firms leverage																									
Share of non-financial corporate bonds with a spread over 10%																									
Public firms quick ratio																									
Corporate sector liquidity																									
Trading liquidity																									
Net accumulation / total assets of corporate bonds special interest mutual fund																									
Net accumulation / total assets of equity special interest mutual funds																									
Net accumulation / total assets of government bonds special interest mutual funds																									
Turnover / market value - corporate bonds																									
Turnover / market value - government bonds																									
Turnover / market value - stocks																									
Financial sector liquidity																									
Banks average corporate bond spread																									
Banks credit / deposits																									
Insurance companies average corporate bond spread																									
Banks' return on assets																									
Banks' return on equity																									
Capital / total balance sheet assets																									
Capital assets ratio (over 1)																									
Insurance - capital / solvency																									
Insurance - return on equity																									
Insurance - leverage ratio																									
LIQUIDITY AND FUNDING RI..																									
SOLVENCY/ LEVERAGE RISK (F)																									

2.1 The macroeconomic environment – domestic and global

	2019:2	2020:1
Real activity, labor market, and inflation		
Country risk (risk premium, credit rating)		
Fiscal policy		
The global environment		

Economic activity has been severely affected by the spread of the COVID-19 virus. The impact has encompassed most sectors of the economy and households. The government has adopted a fiscal policy designed to reduce the damage to the business sector and to households. At the same time, there was a sharp decline in tax revenue due to the decline in activity. Therefore, the government deficit is expected to reach 12 percent of GDP at the end of the year, and the debt-to-GDP ratio is expected to increase to 75 percent. The Bank of Israel has taken several exceptional measures, including large purchases of government bonds and the provision of liquidity in foreign currency. The level of uncertainty regarding the macroeconomic environment is very high, mainly due to the rate of spread of the virus in the second wave, the extent of restrictions imposed on the economy, and the pace of return to routine. Under these circumstances, growth and unemployment forecasts are updated frequently, and according to the Bank of Israel Research Department’s staff forecast (published on July 6), GDP will shrink by 6 percent in 2020, and the growth rate in 2021 will be 7.5 percent. This is assuming that there will not be another lockdown.

2.1.1 The domestic environment

Real activity

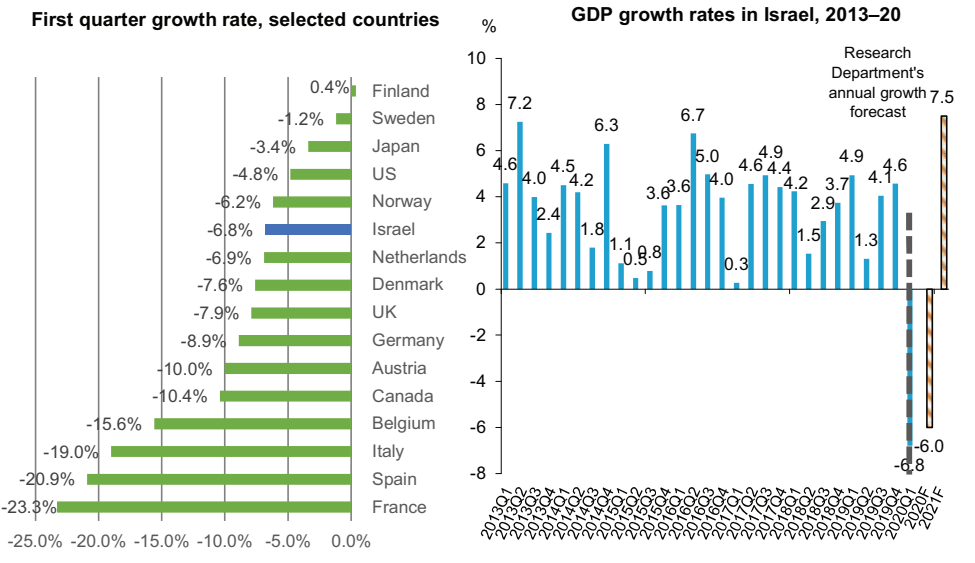
The COVID-19 pandemic began to be felt in Israeli markets and economic activity in the second half of February. Within a short time, there were sharp declines in financial asset prices, and later, due to the restrictions imposed and real fears of the epidemic, economic activity was also severely affected. As a result, economic forecasts were revised sharply downward, and the level of uncertainty rose sharply.

According to the second estimate of National Accounts data for the first quarter, GDP shrank by 6.8 percent percent, and business output declined by 8.5 percent percent (in annual terms; Figure 2). GDP growth was mainly affected by the lockdown of the economy in the last two weeks of the quarter, and to a much lesser extent by the increase in car purchases in December 2019 in response to the tax increase expected at the beginning of 2020. The components of growth indicate a 20.2 percent percent decline in most components of private consumption (with the exception of a small increase in housing services and an increase of 6.9 percent percent in food consumption). Goods and services imports (excluding diamonds, defense, and ships and aircraft) declined sharply by 32.1 percent percent, while goods and services exports increased by 2.9 percent (excluding diamonds and startups), influenced by the start of gas exports from the “Leviathan” reservoir.

Due to the crisis, there was a sharp jump in the number of employees put on unpaid leave. According to the Labor Force Survey, the number of employees temporarily absent from work jumped from about 167,000 in February to about 894,000 in March, and to about 1.5 million in April (Figure 3), accounting for 39 percent of all employees. It then dropped to about 800,000 in May. The highest rates of temporary absence were found in the entertainment and leisure, education, and hospitality and food services industries.

GDP growth declined sharply in the first quarter both in Israel and in other countries. Contraction is expected in 2020, and under certain assumptions, there is a forecast for growth in 2021.

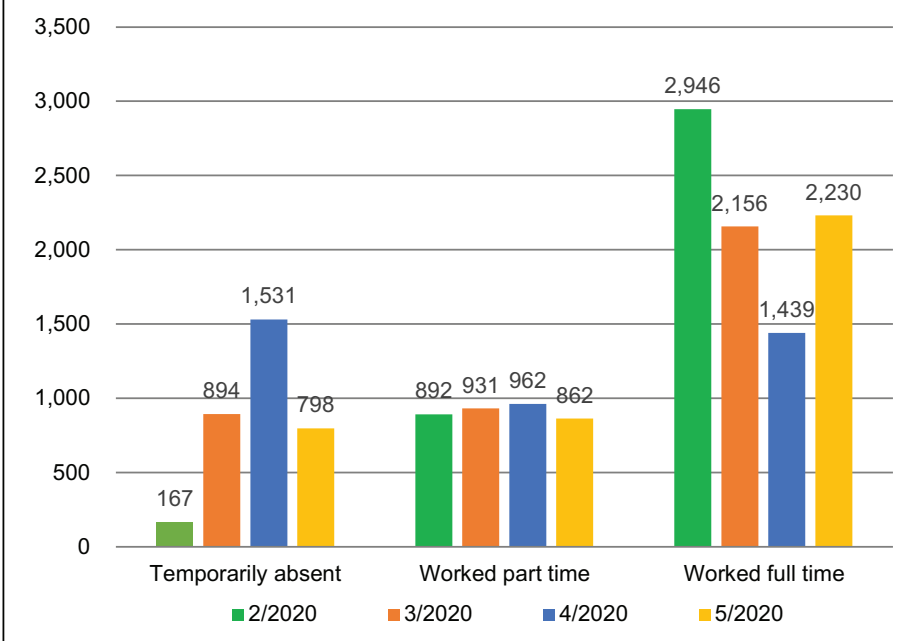
Figure 2
GDP Growth Rate in Israel and Selected Countries^a, 2016–20^b



^a The comparison between countries must take into account that the spread of the pandemic differs between countries, not all countries entered lockdown at the same time, and some of them adopted different lockdown policies or did not impose a lockdown.
^b The figure for the first quarter of 2020 is in annual terms.

About half of workers who worked full time in February were forced to reduce their scope of employment in April. There was some recovery in May.

Figure 3
The Labor Market, February–May 2020 (thousand)



SOURCE: Based on Central Bureau of Statistics Labor Force Survey.

In the second half of April, the government began easing restrictions on mobility, business activity, and the education system, which led to significant reductions in the shutdown rate of economic activity and employment. Rapid indicators sampled in the peak months of the crisis, such as credit card purchases, mobility indices¹⁵, electricity consumption, and rapid CBS surveys, indicate a decline in economic activity, followed by a continued recovery in parts of the economy since the restrictions began to be eased, and dependent thereon. According to the Research Department's assessment, the scope of the economy's shutdown, which was about 36 percent of activity at the height of the crisis, declined to about 12 percent in June.

The tremendous uncertainty regarding public behavior in the new reality combined with even higher epidemiological uncertainty make it very difficult to prepare economic forecasts. As a result, economic forecasts have been significantly revised, with high frequency, in Israel and around the world. According to the Research Department's staff forecast of July 6, 2020, GDP is expected to shrink by 6 percent in 2020, and to grow by 7.5 percent in 2021, assuming a gradual process of economic recovery under social distancing restrictions but without further lockdown. Despite the high growth rate forecast for 2021 relative to the pre-crisis forecast, it still represents a level of activity that is about 4 percent lower. According to this forecast, the unemployment rate will be 9 percent at the end of 2020, and 6 percent at the end of 2021.

The fiscal picture

Most of the components in the macroeconomic environment were, as mentioned, in relatively good condition when the financial crisis began, but the components related to fiscal policy and the political environment were less favorable. Although in recent years the growth rate has been above its potential rate, the deficit in 2019 was about 4 percent, among the highest in the advanced economies, partly due to a structural deficit that contributed to a deviation from the deficit ceiling, which is 2.9 percent. In addition, the crisis erupted after a long period of political uncertainty—three elections, a long period of a transitional government¹⁶, and a lack of an approved budget from the beginning of 2020. Only in mid-May was a government formed, defined as a national emergency government, facing budgetary challenges and a severe crisis.

As the extent of the COVID-19 crisis became known, the government began formulating and implementing a plan to deal with it, which was subsequently expanded twice. The first two phases amounted to about NIS 100 billion, including about NIS 43.6 billion in direct expenses, NIS 14.6 billion in unemployment benefit payments by the National Insurance Institute, and NIS 41.5 billion in credit and government guarantees. There was also a budget allocation in the state budget for government guaranteed credit to businesses through the banks.

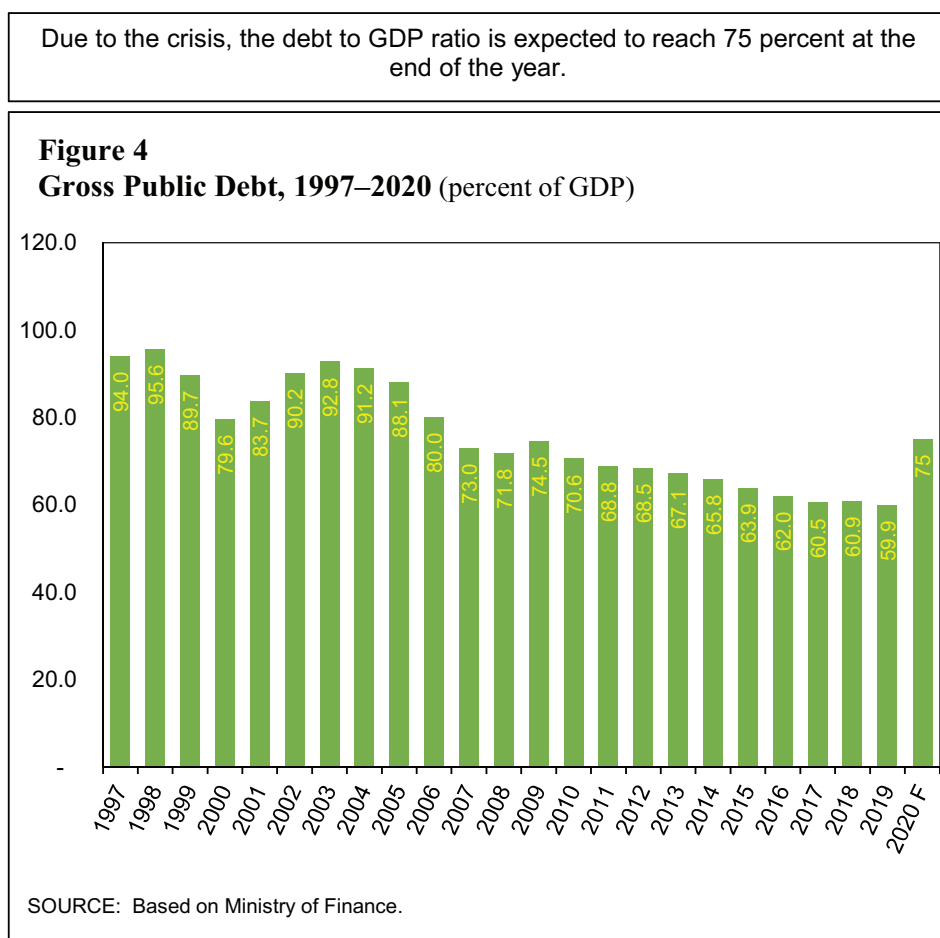
In July, the government approved a safety net for the unemployed, the self-employed, and small businesses. This is based on the extension of unemployment benefits until June 2021, or until the unemployment rate drops to 7.5 percent; bimonthly grants for the self-employed whose income has been affected, and grants for small and medium-sized businesses that have been severely affected by the crisis due to their fixed expenses and loss of profits. The government also announced a grant totaling about NIS 7 billion to all Israeli citizens (except for a small group) and its intention to present a plan to accelerate economic growth and encourage demand. By the end of July 2020, discussions had not yet started in the government for the approval of the state budget, and against this background, political uncertainty increased.

The negative impact of the crisis on economic activity is also reflected in a sharp decline in government tax revenues, and compared to the path predicted by the Ministry of Finance, revenues were about NIS 24 billion

¹⁵ See the Bank of Israel publication dated May 10, 2020 (on the Press Releases page): "Special Analysis by the Bank of Israel Research Department: Initial Economic Insights from Indices of Changes in Mobility Patterns in Israel".

¹⁶ For example, the absence of Knesset committees made it difficult to implement government decisions quickly.

lower from the beginning of the year to July. The government's total revenues from taxes between January and July 2020 amounted to NIS 176 billion, a real decrease of 6 percent compared to revenues in the corresponding period last year. The government's cumulative deficit in the 12 months ending in May amounted to 7.2 percent of GDP, and the current deficit is expected to reach about 13 percent of GDP at the end of 2020. The high deficit at the beginning of the crisis and its sharp rise due to the crisis resulted in a sharp rise in the debt-to-GDP ratio, which is expected to skyrocket to 77 percent at the end of 2020 compared to the end of 2019 (Figure 4). In order to fund the exceptional increase in expenses between March and July, the government raised about NIS 42 billion in Israel and about NIS 46 billion abroad. The coverage ratio in the Israeli bond issues was 5.44, and it appears that the local market is absorbing the increase in government bond issues well. As part of the fundraising abroad, the government issued 100-year bonds totaling about \$1 billion with a yield of about 4.5 percent (the yield on 30-year Israeli government bonds traded in Israel was about 2.1 percent during the period of the issue abroad).



Inflation and monetary policy

The downward trend in the inflation environment continues, and has intensified due to the crisis, mainly due to the decline in the price of oil. In the 12 months ending in May, prices fell by 1.6 percent. Inflation expectations for the year from all sources are lower than the inflation target. According to the Research Department's forecast, inflation during 2020 is expected to total -1.1 percent, and over the next four quarters (from the third quarter of 2020 to the second quarter of 2021) it is expected to be -0.1 percent. Because of the crisis, inflation is expected to be low due to

the impact on demand, and mainly the sharp drop in the price of oil and other commodities, unemployment and its effect on wages, and some restraint in the rate of increase in rental fees. The Research Department also estimates that the Bank of Israel's interest rate in the second quarter of 2021 will be in the range of 0-0.1 percent. According to capital market expectations, the interest rate in a year will be 0.1 percent, and according to the forecasters' average projections, it will be 0.05 percent.

In addition to the interest rates, the Bank of Israel made use of other policy instruments in order to address the liquidity needs of the economy and to moderate the increase in yields in the credit market, in both in local currency and foreign exchange. The Bank of Israel is not anomalous in its implementation of unconventional monetary instruments. The low inflation rates that prevailed for a relatively long time before and during the crisis enabled central banks to use the tools at their disposal with relatively high intensity. Following the 2008 Global Financial Crisis, it took some time for central banks to start implementing unconventional monetary tools. In the current crisis, however, the monetary toolbox was ready, and all tools were used very quickly and with greater intensity. As part of the tools, the already low interest rates were further reduced, government bonds¹⁷ were purchased on a huge scale, and in the United States, for example, low-rated corporate bonds were also purchased. The assistance given by central banks to their governments has been reflected, as mentioned, in massive purchases of government bonds in larger amounts than during the 2008 crisis.

The economy's credit risks

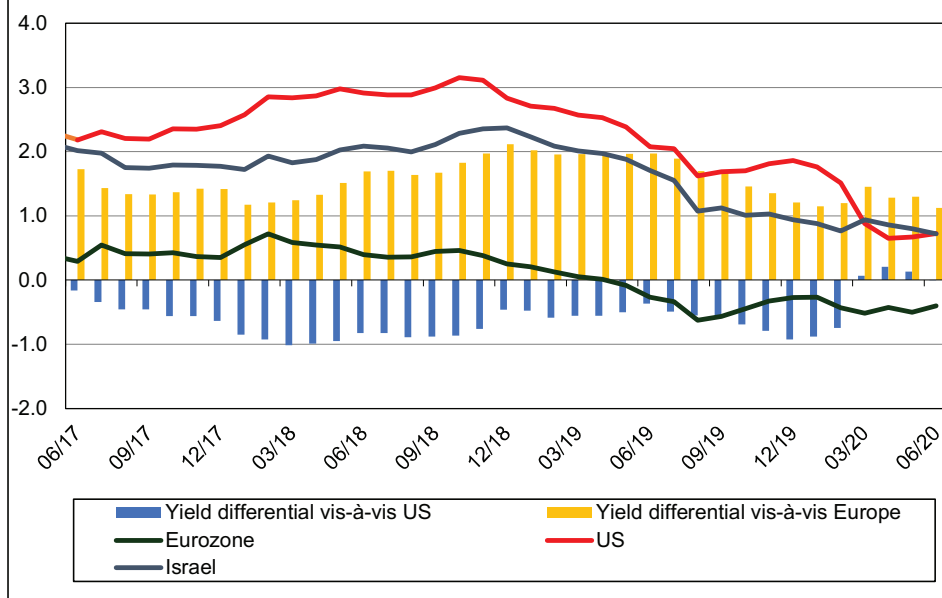
Although it left Israel's rating unchanged, the Moody's ratings agency downgraded the rating outlook from "positive" to "neutral". What particularly bothered the rating company was, apparently, the government's budget performance, including the deficit, which reached 4 percent. In its announcement, the company stated that Israel's budget policy is not characterized by the resilience required of countries with a similar rating. In contrast, the S&P ratings agency left Israel's rating at AA- with a stable outlook, unchanged from the previous decision. In its announcement of the rating level ratification, S&P notes the good opening conditions of the economy at the beginning of the crisis, the fiscal and monetary policy measures that will help the economy recover from the crisis, the high-tech sector in Israel, the strong banking system and the formation of the government, which ends a long period of uncertainty and restores the ability to take significant long-term steps. On the other hand, the government's debt-to-GDP ratio and the geopolitical risks continued to be main limitations to the rating remained.

Since this is a global crisis, the sharp rise in government debt relative to GDP is not unique to Israel, and therefore it appears that this increase is being received with relative forbearance by the ratings agencies and markets. Yields on 10-year Israeli government bonds increased slightly due to the crisis, but later declined—apparently due to the Bank of Israel's announcement of a NIS 50 billion bond purchasing program and the Fed's announcement of massive bond purchases in the US. For the first time in a long time, the yield spread between the Israeli government's 10-year bond and its US counterpart is positive (Figure 5). Israel's risk premium, as reflected in the 5-year CDS, has risen due to the Corona crisis. An increase in premium was recorded in all countries in Israel's credit rating reference group.

¹⁷ Regarding the Bank of Israel's activity in this area, see a document published in the Bank of Israel's notice dated March 6, 2020: "Research Department Analysis: The Impact of the Bank of Israel's Intervention in the Government Bond Market at the Peak of the Crisis". In addition, see Bank of Israel Governor Prof. Amir Yaron's speech at the Israeli Economic Association conference on June 15, 2020 (on the Bank of Israel website under "Press Releases") and Box 1 in this report.

The yield on Israeli 10-year government bonds increased slightly due to the crisis, but declined thereafter.

Figure 5
Ten-Year Nominal Interest Rates, Israel ("Shahar"), US and Eurozone
June 2017–June 2020 (monthly average, percent)



2.1.2 The global economy

The beginning of the year was characterized by relative optimism, and positive momentum in the economy, which was supported by positive developments in the political arena.¹⁸ Although the International Monetary Fund (IMF)¹⁹ lowered its growth forecast, it expected initial signs of stabilization in activity. However, the COVID-19 epidemic that erupted in China and became a global pandemic at the end of the first quarter of the year led to a sharp downturn in economic activity and an unprecedented recession. At this time, the pandemic continues to spread. The number of identified carriers of the disease is about 11 million (as of the beginning of July 2020), and the number of victims exceeds half a million.

The spread of the pandemic has motivated many countries to take “social distancing” measures. These measures, including restrictions on movement and gatherings, closure (partial or full) of the education system, and restrictions on public transportation and economic activity, have resulted in a deep recession in the global economy²⁰ and have greatly increased financial risk.

The IMF’s spring forecast was published in April, and projected a 3 percent contraction in economic activity (compared to a 0.1 percent contraction in 2009) led by Europe, the US, and Japan. However, toward the end of June a revised forecast was published, according to which the global economy will shrink by 4.9 percent this year. World trade continues to shrink, and preliminary indices point to a continuation of the negative trend.

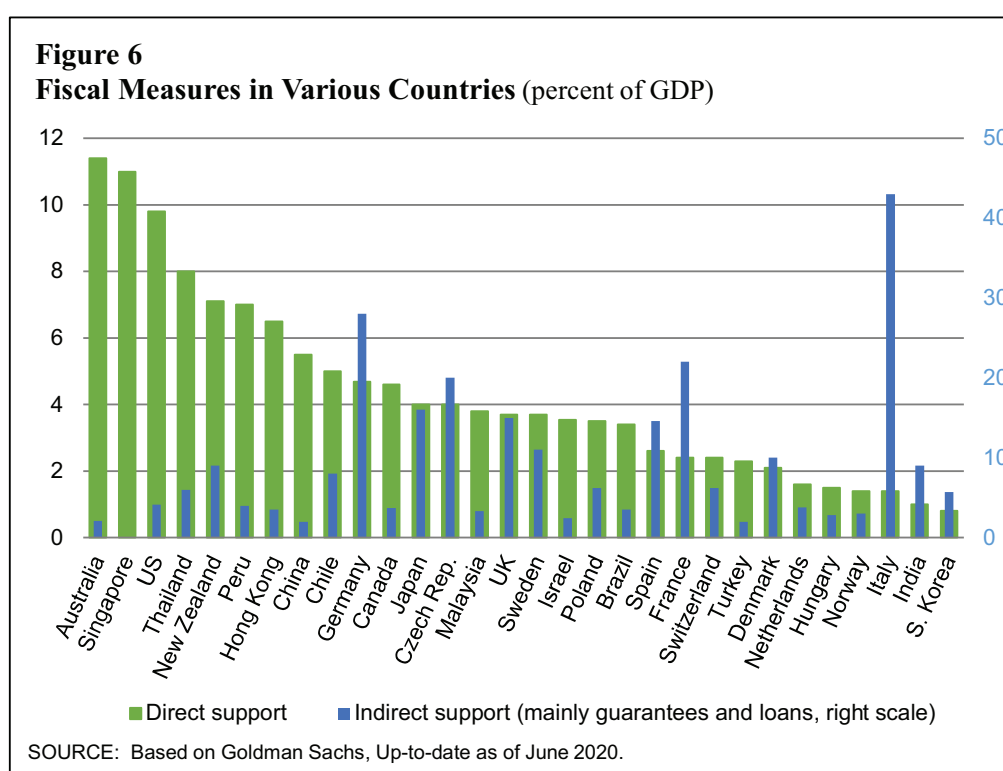
¹⁸ Signing of the phase one agreement in the US-China trade war and Britain’s official exit from the EU.

¹⁹ WEO January 2020.

²⁰ According to OECD estimates, a closure (partial or full) may reduce economic activity by about 30 percent at the time of application.

At present, it is difficult to assess the extent of the pandemic’s overall adverse impact to economic activity, because it will be greatly affected by the way the pandemic spreads, by government response measures, and by medical developments, primarily finding a vaccine for the disease.

The huge economic impact has prompted governments and central banks to take unprecedented steps to support the economy and prevent a massive collapse of businesses. Many governments have taken unprecedented fiscal measures (Figure 6), the main ones being: support for the unemployed and employment grants, loans and grants to businesses, financial transfers to the health system, and in a number of countries—including the US and Japan—direct financial transfers to the people (helicopter money). These measures are expected to result in a substantial increase in the government deficits and a sharp rise in countries’ debt-to-GDP ratio, which could have long-term implications for fiscal policy and global growth. In this context it is important to note that the low inflation environment is expected to make it harder (especially for developed countries) to erode the debt.²¹ The global rise in debt levels is expected to be high, and it is still too early to assess the implications of the new situation.

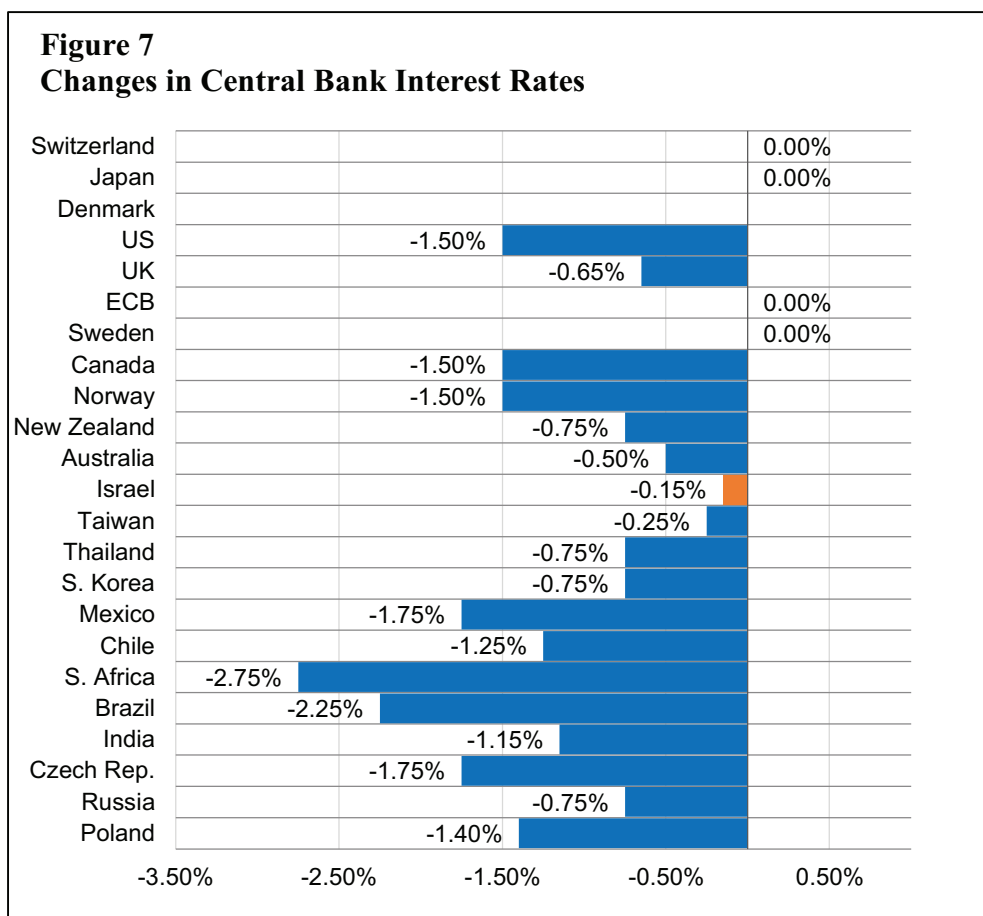


The decisive steps taken by the authorities are helping businesses and households deal with the crisis, but there is fear of a wave of bankruptcies once the impact of these measures has dissipated. On the other hand, past experience shows that this concern can motivate the authorities to continue with supportive measures for a long time in a way that could disrupt the pricing of risks and lead to distortions in the allocation of capital.

Unprecedented measures have also been taken on the monetary front. The central banks have lowered interest rates (Figure 7) in many cases in meetings outside the normal schedule, and are adopting a variety of additional tools in order to support the economy. These include unlimited quantitative easing in some countries, programs to

²¹ Inflation, population growth, and productivity were the main factors that led to the decline in the debt-to-GDP ratio in Britain and in the United States after World War II.

control the interest rate curve, temporary financing of the government bond issues, easing of the capital requirements for commercial banks, credit and guarantee programs, provision of cheaper financing to banks conditional on the provision of credit to nonfinancial entities²², provision of liquidity in local currency and in US dollars, and substantial expansion of the amount and variety of eligible collateral.



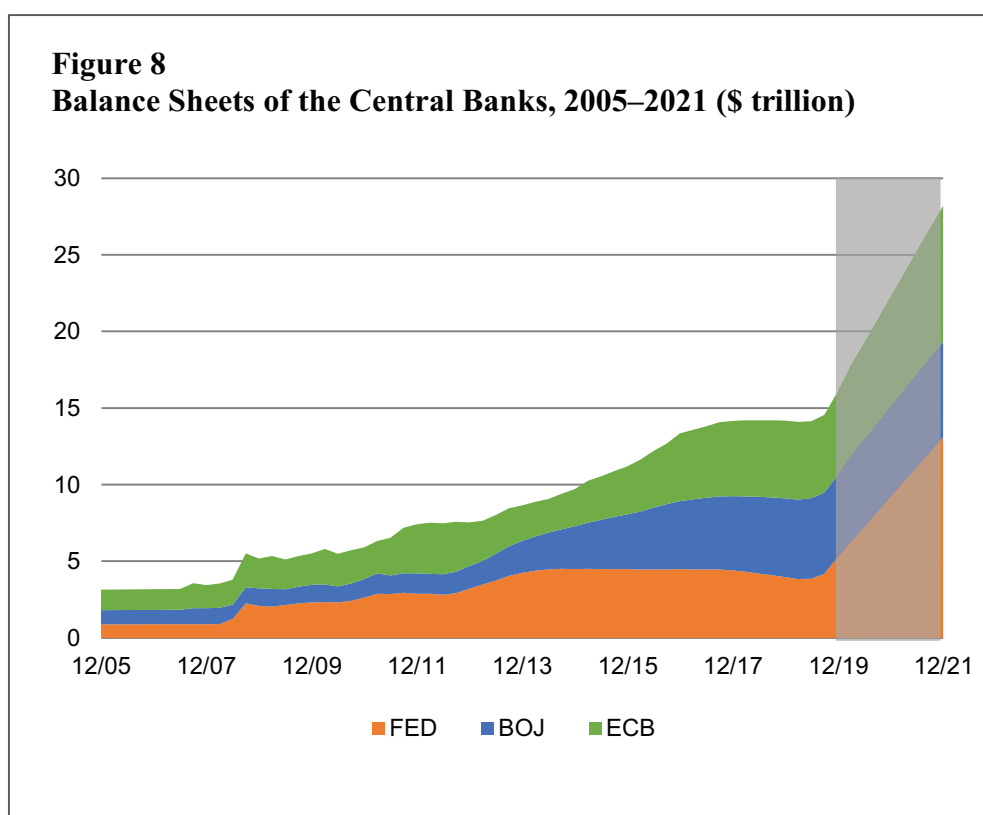
These activities have led to a significant increase in the central banks' balance sheets (Figure 8), and their aggregate balance sheet is expected to continue to grow sharply to an unprecedented level, and at a much faster pace than during the Global Financial Crisis.

These measures have led to some improvement and relief in the financial conditions. This is especially so in the United States, where the monetary interest rate was relatively high compared to other advanced economies, which has allowed it to lower the shortest-term interest rate from 150 basis points. However, in most countries financial conditions have remained tighter than in recent years.

The decline in demand against the background of the deep recession and the decline in commodity prices resulted in a significant drop in inflation, which moved farther away from the central banks' targets. Long-term inflation expectations have also declined, which may reflect fears of a slow recovery in demand due to the damage to the economy.

²² TLTROs.

The balance of risks to global growth continues to decline. Heading the risks is a second wave of the pandemic, the collapse of companies due to the economic situation, and geopolitical risk, mainly between the United States and China and within Europe.

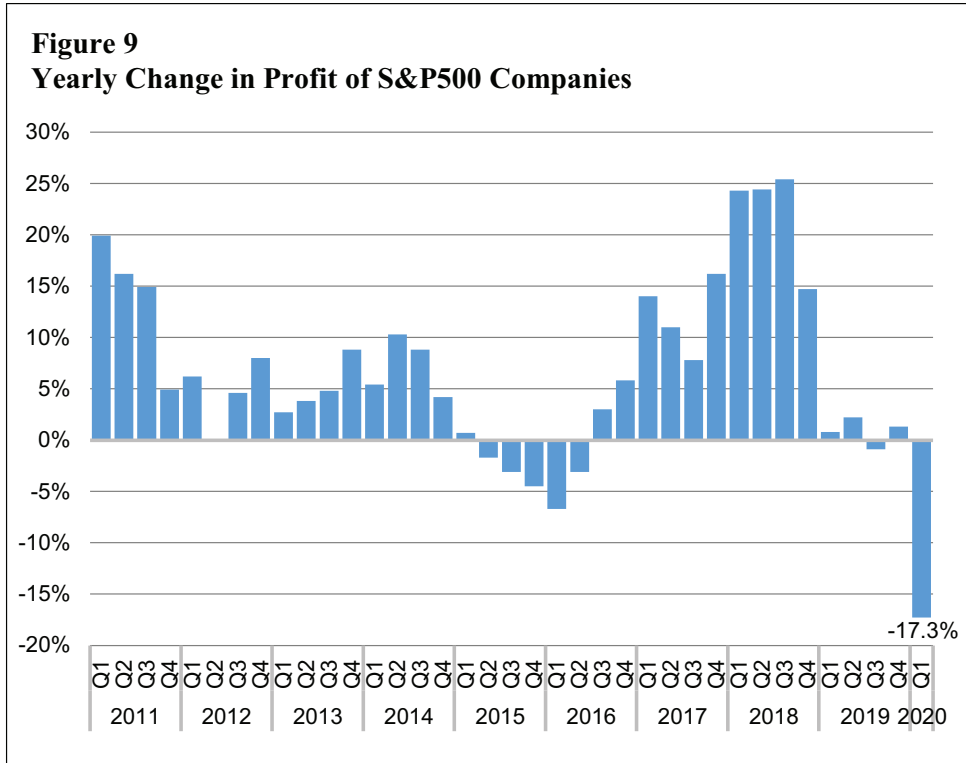


2.1.3 Global markets

The outbreak of the epidemic in China earlier this year had little effect on financial markets, but from mid-February—with the spread of the pandemic outside of China, and especially in Western countries—stock prices collapsed, corporate bond spreads widened, the US dollar strengthened, and market volatility increased sharply, as reflected in the VIX index.

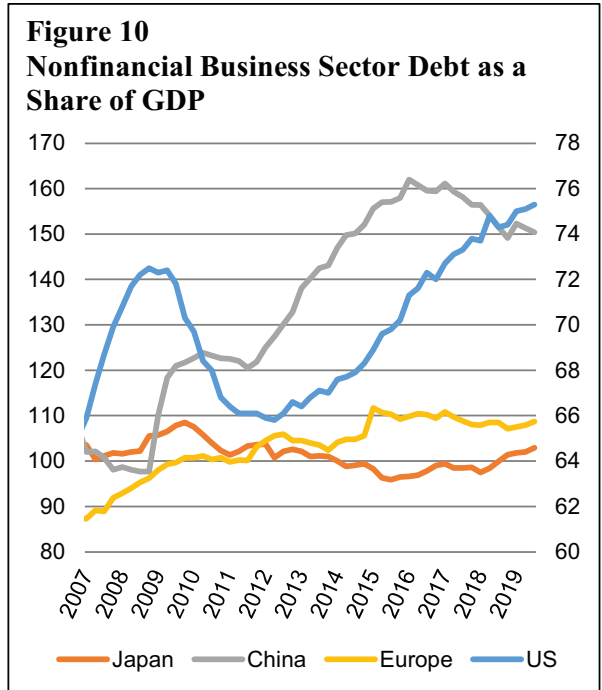
Concerns regarding the economic slowdown, which led to a flight to safe assets, and the massive quantitative expansions carried out by central banks, resulted in a decline in bond yields. Moreover, the rapid movement of investors from risky long-term assets to safe assets with a short duration and high liquidity has led to very anomalous pressures in many markets, including foreign exchange markets, government bond markets, and interbank markets worldwide. In response, many central banks have launched plans to increase liquidity in domestic and foreign exchange markets.

The decisive steps by the authorities as well as the apparent beginning of a trend of easing social isolation have resulted in a change in the trend in the financial markets. Stock prices have increased, led by the big technology companies, the corporate spread has narrowed, and the US dollar has weakened. It is important to note that stock prices rose even though corporate revenues fell (Figure 9), earnings per share fell, and expectations for future earnings also declined. This led to a wave of rating downgrades, reflecting an increase in the companies' financial risk and the growing fear that there is a gap between asset prices and their "value".



According to IMF estimates, the main risk in the short term is a further worsening in financial conditions, which will impact the financing ability of companies, especially in the weak centers. In the medium term, the main risk is damage to the resilience of the global banking system in the low interest rate environment. However, we emphasize that banking system entered the current crisis in a better position than it did upon entering the Global Financial Crisis of 2008–2009 (GFC).

As fear of the COVID-19 disease increased, an outflow of capital was recorded from risky assets, which led to increased spreads²³ and liquidity difficulties.²⁴ A resurgence of concerns in the face of a worsening in the pandemic or another factor²⁵ will lead to further declines in the value of assets, making their recycling difficult, and may lead to a wave of corporate bankruptcies. This risk may materialize even if commercial



²³ With regard to corporate bonds, there was a very sharp rise in yields in the energy sector (in view of the sharp drop in the price of oil) and in the aviation sector (given the drop in international passenger flights).

²⁴ The IMF estimates that the rate of assets with liquidity difficulties reached about 50 percent of the stocks on certain days and more than 55 percent of the bonds, out of the total assets reviewed by the IMF.

²⁵ For example: a reassessed and lower estimate of the economic slowdown or due to concerns arising from a renewed escalation of China-US tensions.

banks reduce their loan volume due to a weakness in capital²⁶ or from a fear of credit losses.²⁷

It is important to note that after the economic crisis erupted in 2008 due to the weakness of the banking sector, the resilience of the banking sector has improved significantly, but the leverage level of companies has risen in most economies and turned them into a significant risk factor²⁸, especially in China (Figure 10).

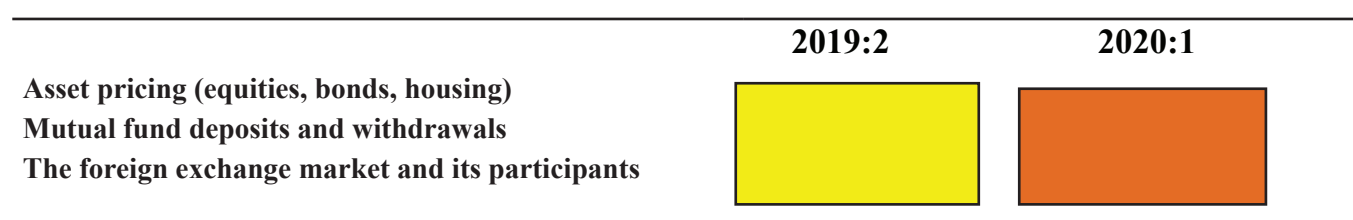
The risk level is higher in companies and entities that took on debt at high interest rates.²⁹ This credit is defined by the IMF as high-yield bonds, leveraged credit, and private debt. According to the IMF, credit of this type currently totals about US\$ 9 trillion, almost 10 percent of global GDP, and companies that have relied on it to finance their activities are even more exposed to recycling risk and bankruptcy.

If the condition of a significant number of companies deteriorates to the point of bankruptcy, investors' fears are likely to intensify greatly, further lowering the value of risky assets. This will increase the risk of a widespread wave of bankruptcies and a crisis in the real economy.

It should be noted that in the event of substantial withdrawals from institutional entities, institutional investors may have difficulty realizing risky assets due to their low liquidity. This may lead to the spread of withdrawals from solid assets as well, and an increase in systemic risk. This risk is expected to materialize in the event of a renewed spread or exacerbation of the pandemic to the extent that it again increases investors' risk aversion. In the medium term, the IMF notes the risk of erosion of the commercial banks' profits in view of the low interest rates prevailing in the advanced economies.

Banking system regulators have learned lessons from the GFC, and the measures taken have resulted in a system that is more secure, which has helped it in the current crisis despite considerable market pressures. Nevertheless, the projected credit losses, which will hurt the banking system's capital, and the interest rate environment—which is expected to remain very low in the coming years as well, thereby eroding the profit margins of commercial banks—are expected to result in low bank profitability and difficulties in raising capital. All of this could damage the banks' capital buffers and put the banking system at risk in the medium term.

2.2 Asset prices in Israel



The outbreak of the COVID-19 virus has led to sharp declines in the prices of securities traded on the stock exchange and, despite the trend of recovery since the end of March, their prices have not returned to precrisis levels. Along with the sharp declines, there were large withdrawals from mutual funds in March. Home prices, which have continued to rise, will be affected, among other things, by the condition of households and the

²⁶ This can result from the repricing of assets.

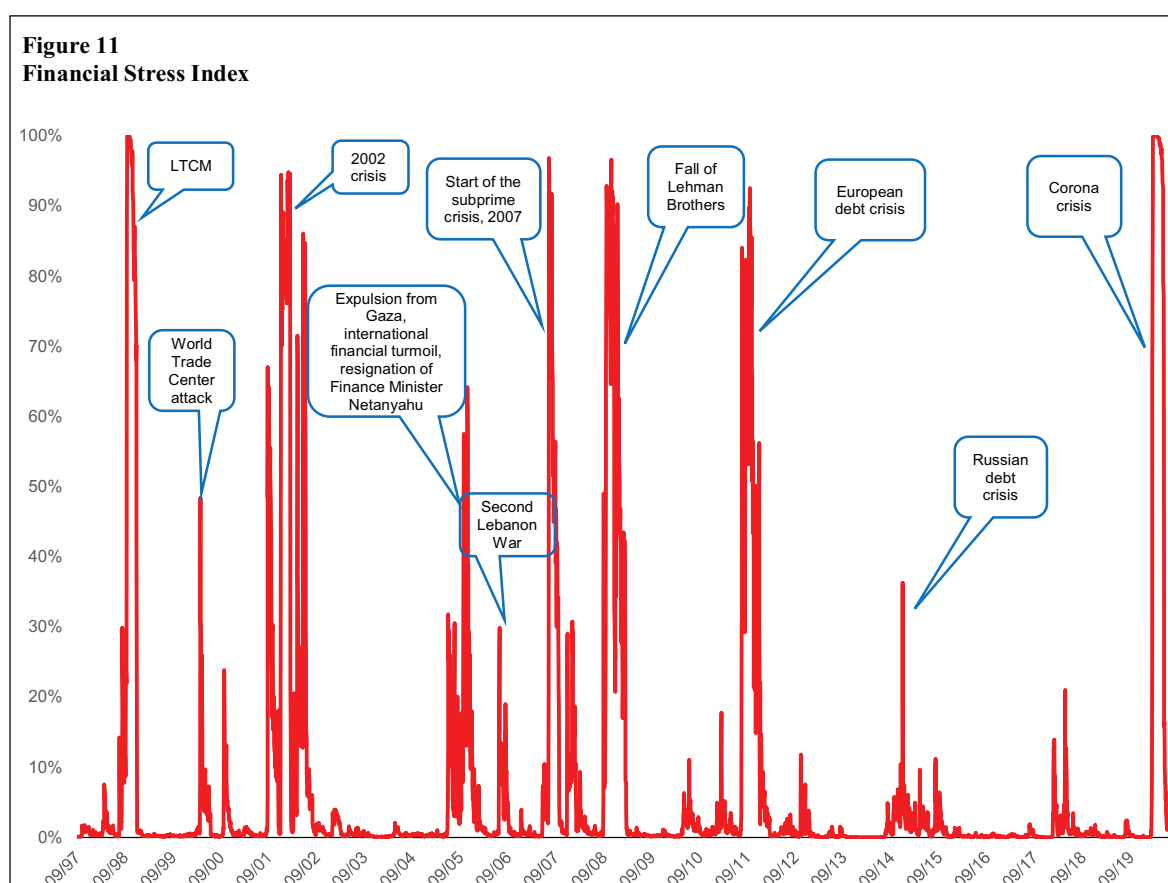
²⁷ To deal with this danger, supervisory entities around the world have taken various steps, including: easing of the required capital and liquidity ratios or the manner in which they are calculated, restrictions on the distribution of dividends and cheaper designated loans for banks.

²⁸ Household leverage is relatively low compared to the GFC, but a long employment crisis could impact it as well.

²⁹ Risky credit.

industry's volume of activity in the shadow of the pandemic. The monitor indicates high risk in this channel, resulting from a high level of pricing indices in the housing market and volatility in financial asset prices.

The financial stress index³⁰ (Figure 11), which measures the probability that the economy is going through a financial crisis, and is based on various indicators taken from the Israeli financial markets (foreign exchange, government bonds, corporate bonds, and equities) reached 100 percent during the crisis after it was very close to zero for a long time. In the current crisis, what stood out is the fact that from a long-term perspective, all the series that feed the index reached historical highs in a very short time. Analysis of the development of the index components shows that the COVID-19 crisis has had an extreme impact on the markets, and that it is even more severe than the LTCM crisis of 1998. The index remained at its high level for about two months from the beginning of the crisis despite improvements in most of its components. The reason for the high level is the herd behavior that characterized the markets during those two months—rapid deterioration in a relatively short time and a rapid improvement in the index components in a coordinated manner.³¹



³⁰ See Y. Saadon and M. Graham (2013), “Composite Index for Tracking Financial Markets in Israel”, Discussion Papers Series 2013.01, Bank of Israel Research Department, and Chapter 6 of the *Financial Stability Report* for the Second Half of 2016.

³¹ Coordinated and herd movement in the asset markets is perceived by the index as a negative phenomenon, indicating financial stress even when it involves price increases.

2.2.1 The government bond market

The increases observed in the government bond index since the beginning of the year turned into decreases in March 2020 due to the COVID-19 crisis. The yield to maturity of 10-year government bonds rose sharply from 0.4 percent at the beginning of March to 1.4 percent at the end of the month. This is an anomalous increase compared to previous periods, but it is not unusual by international comparison, as can be seen in Figure 12.

On March 15, 2020, the Bank of Israel began intervening in the government bond market in order to moderate the excessive volatility and increase liquidity. These measures are also intended to strengthen the transmission from the interest rate set by the Bank of Israel Monetary Committee to longer-term interest rates. On March 23, 2020, the Bank launched a NIS 50 billion program to purchase government bonds in order to facilitate credit conditions in the economy. As of May 31, 2020, the Bank of Israel had purchased NIS 19.2 billion in bonds.

The largest players in the government bond market are the provident funds and advanced study funds (which hold 22 percent of all bonds), and the pension funds (which hold 18.5 percent). Both of these groups are characterized by long-term investment compared to other market players. While these entities did not experience large redemptions, a change in the composition of their portfolios was observed. They sold government bonds in very substantial amounts (about NIS 17 billion in March 2020), which could have caused price pressures and an increase in yields in the government bond market. The movement in the institutional investors' portfolios can be seen in Figure 13. It appears that the institutional investors sold safe assets (government bonds, treasury bills, cash and deposits), and diverted most of the proceeds abroad, probably to cover collateral requirements, which have increased due to the decline in the value of investments there.

Figure 12
International Comparison of Yields to Return on Government Bonds (percent)

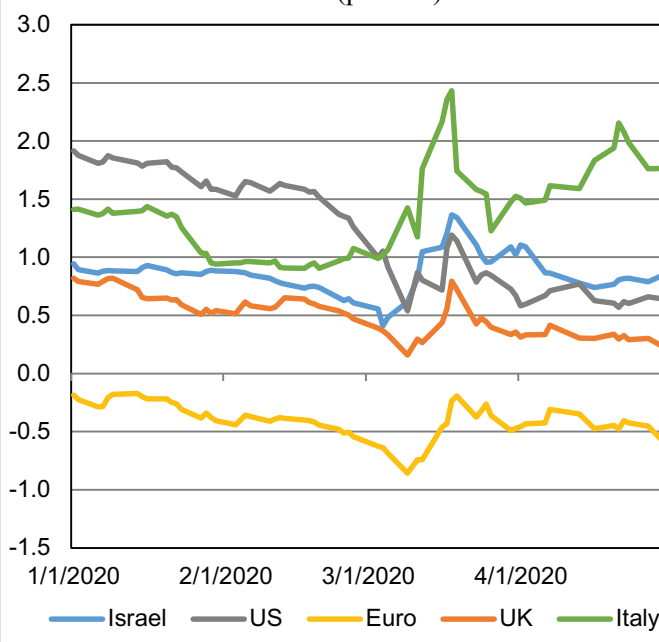
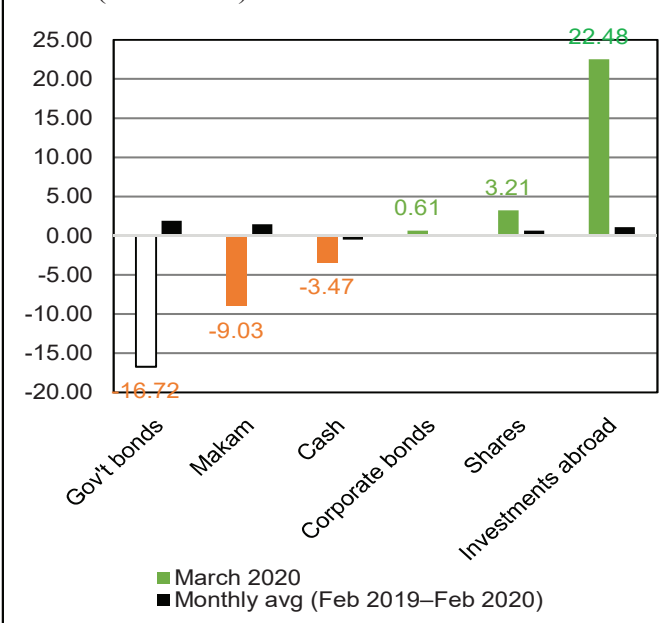


Figure 13
Transactions in Provident Funds, Advanced Training Funds, and Pension Funds, March 2020 (NIS billion)



2.2.2 The corporate bond market

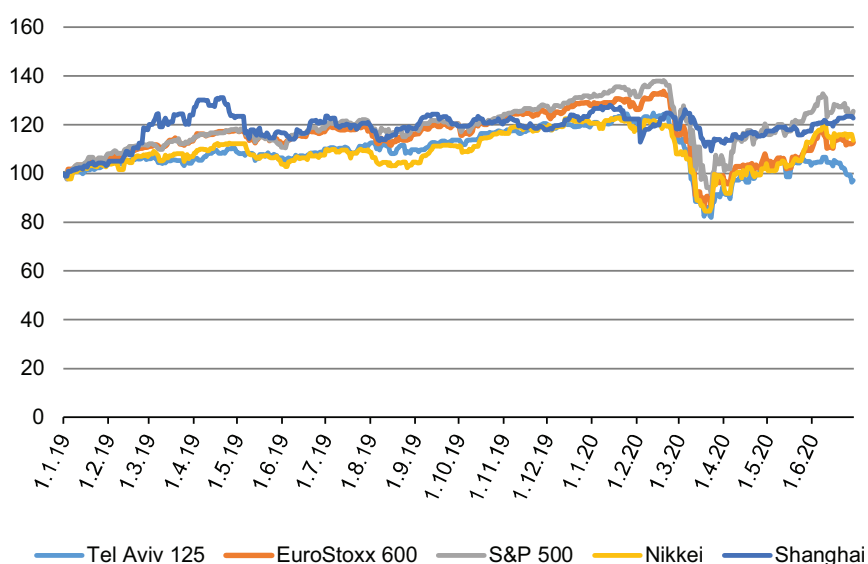
In the period prior to the COVID-19 crisis, the corporate bond market was characterized by slightly narrower spreads (compared to the long-term average) in all industries and all ratings. The difference between A-rated bonds and BBB-rated bonds was also slightly smaller (compared to the long-term), and it is therefore possible that the market only partially reflects the gap between the risk levels at the various ratings. During March, the spreads widened sharply, due to the COVID-19 crisis. At their peak they reached levels similar to those recorded during the 2011 European debt crisis, but still remained at a lower level than during the Global Financial Crisis of 2008. The upward trend in the spreads reversed at the beginning of April, at the end of which the average margin of the nonfinancial business sector was 3.5 percent—lower than in the previous month (4 percent in March 2020) but still higher than in the corresponding month last year (2.7 percent in April 2019). For further analysis of the corporate bond market, see the “Developments in the Corporate Bond Market during the Crisis” in this publication.

2.2.3 The equities market

On the eve of the crisis, there was a positive trend in the leading stock indices on the Tel Aviv Stock Exchange. The implied standard deviations were relatively low, and various pricing indices were in the range of their long-term average. As throughout the world, however, with the growing understanding of the virus’s implications for the economy, stock indices plummeted and implied volatility jumped. While the performance of the Israeli stock indices in 2019 were slightly weaker than in other indices around the world, the strength of the reaction in Israel was similar to that of other indices, as was the correction, which began in the last third of March (Figure 14). But since mid-June, apparently amid growing concerns of a second wave of morbidity and its economic consequences, there was a

Equity indices in Israel and abroad showed similar performance during the crisis and in the exit from it, but there has recently been some separation, with the indices in Israel again declining.

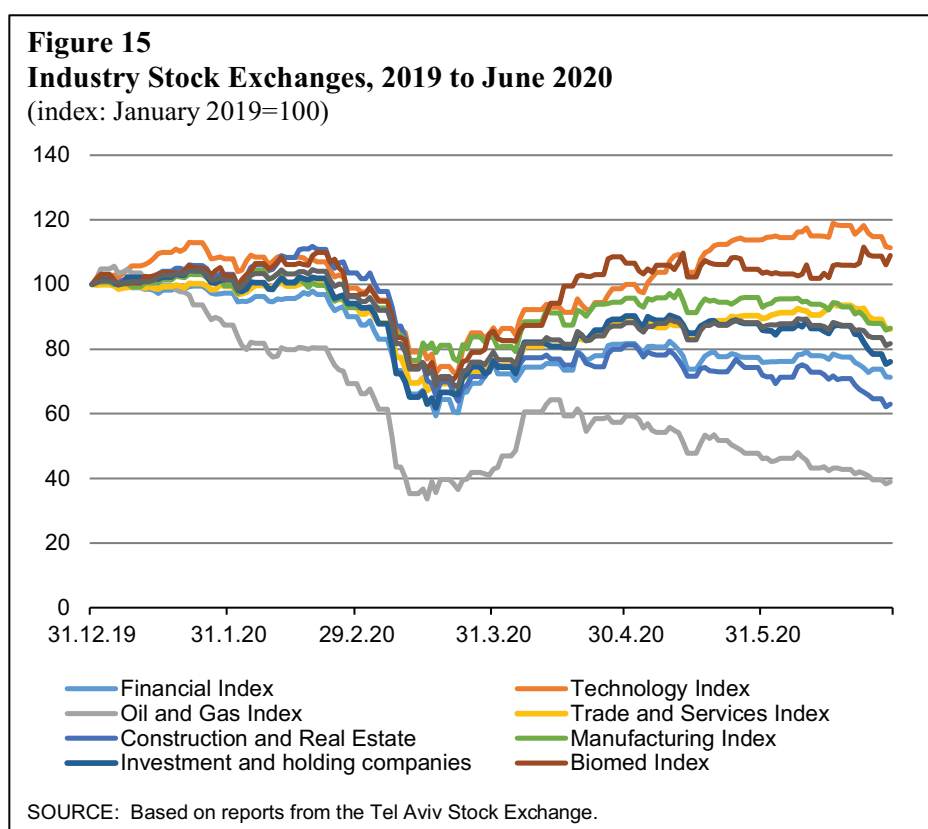
Figure 14
International Comparison of the Development of the Major Equity Indices (in dollar terms, index: January 2019=100)



SOURCE: Based on reports from Stock Exchanges around the world.

break in trends, and local indices began to decline. At present, the Tel Aviv 125 index is 19 percent lower than at the beginning of the year, and implied volatility remains relatively high. Compared with events surrounding the 2008/09 financial crisis, the indices declined more moderately and began rising again faster, and implied volatility behaved in tandem: a more moderate increase and a more rapid decline .

The nature of the crisis is reflected in the difference in adjustment between various sectors and subsectors, as presented in Figures 15 and 16. While the value of stocks of companies in the technology industries (including biomed industries) is currently higher than prior to the crisis, stocks in tourism, hotels, fashion and apparel, and income-generating real estate sectors (in Israel and abroad) have not yet recovered. The stocks of financial companies (banks, insurance companies, and financial services), which are directly affected by macroeconomic developments, remain far from their level just prior to the crisis.

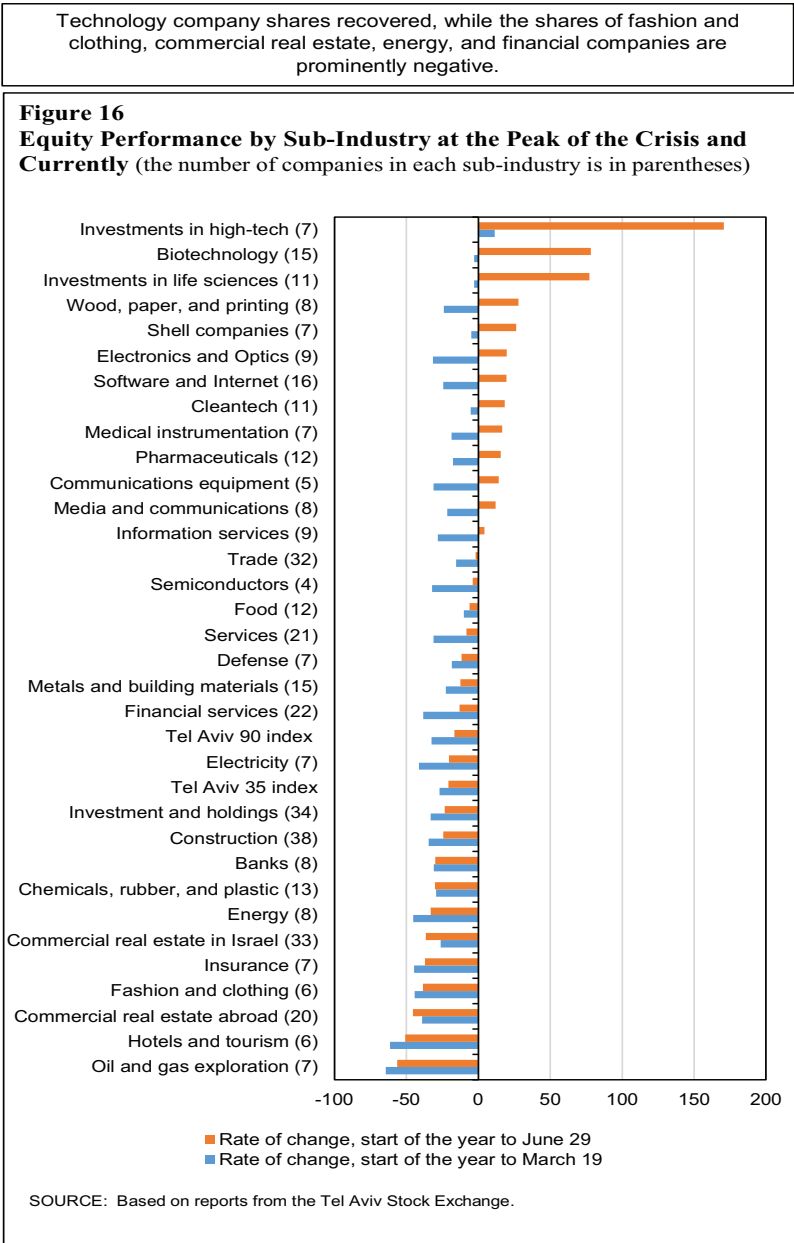


Due to the decline in market value, market multipliers have fallen to historically low levels, especially those of the indices that include large companies. An analysis of the equity multiplier (Figure 17) shows that 16.7 percent of the companies moved from a multiplier of over 1 (a situation in which the company’s market value is higher than its book value) at the end of 2019 to a multiplier of less than 1 at the end of June 2020. This is compared with less than 4 percent of the companies that experienced a similar move in the same period last year (June 2019 compared to December 2018). A multiplier of less than 1 may indicate that market expectations are of a negative return on equity due to expected losses, or at least of a return that is not consistent with the risk.

The sharp decline in the market value of stocks is also reflected in the ratio of net income to market value, the inverse of the P/E ratio. Although profitability in the past year has been on an upward trend, market value—which

looks ahead—has fallen sharply, and as a result, the inverse of the P/E ratio is soaring. When the return on a risk-free asset³² is deducted, the result is the excess return demanded on the stock holdings, and this has reached a record level—almost 2 percentage points above the average level. However, with the publication of first quarter statements, it became clear that, as expected, profits also fell, as did the excess return, which stabilized at its average value (Figure 18).

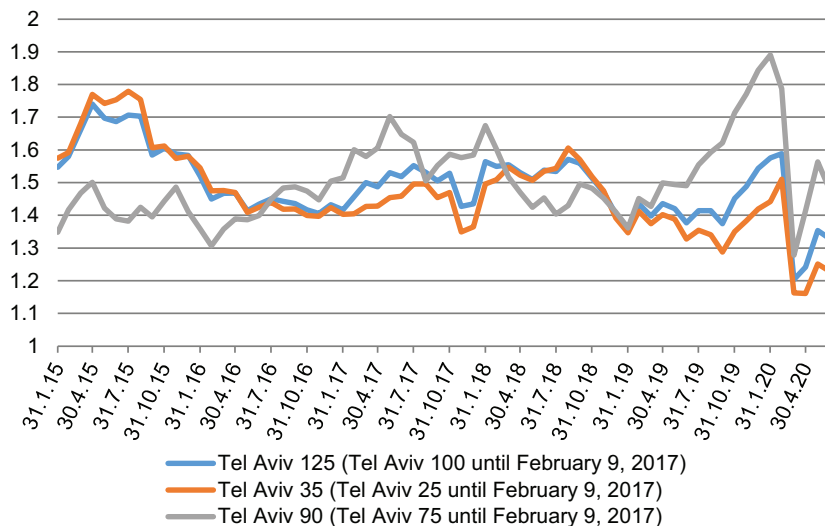
In contrast to what occurred in the corporate and government bond markets, large redemptions from mutual funds made a more limited contribution to price declines. This is because prior to the crisis (February 2020) the mutual funds held only 7.1 percent of the market value of stocks.



³² The yield on 10-year indexed government bonds.

The MV/BV ratio of companies in the Tel Aviv 35 index declined sharply.

Figure 17
Market Value to Book Value (MV/BV) Ratio of the Companies Traded in Tel Aviv (calculated on the main stock exchange indices, January 2015–June 2020)

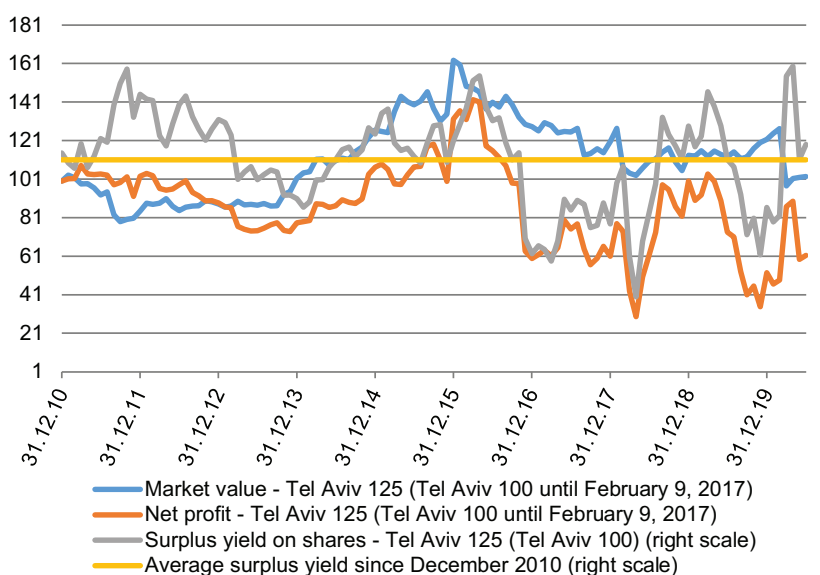


* The MV/BV ratio is calculated by dividing the market value of the company's shares by its book value (shareholder equity).

SOURCE: Based on reports from the Tel Aviv Stock Exchange.

The surplus yield on shares is currently near its long-term average.

Figure 18
The Surplus Yield on Shares (included in the Tel Aviv 125) Compared to that of 10-Year CPI-Indexed Government Bonds (December 2010–June 2020, index: December 2010=100)



SOURCE: Based on reports from the Tel Aviv Stock Exchange.

2.2.4 Housing prices

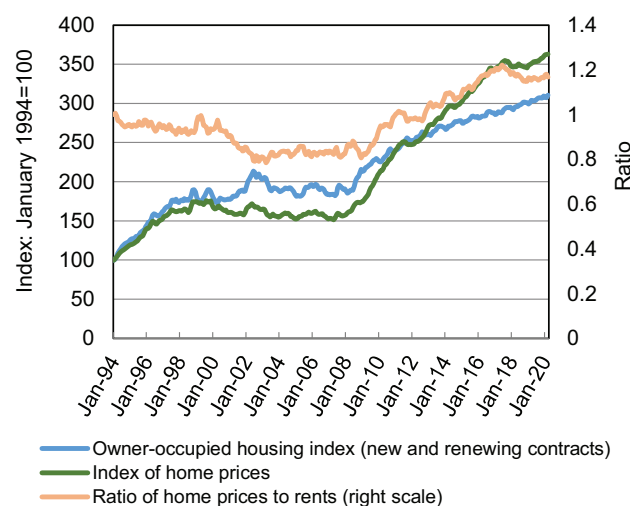
After stabilizing in 2017–18, home prices started to increase again in 2019. The housing price index in March 2020 was 3.2 percent higher than in the corresponding period last year. According to provisional data, the April index indicates a decrease of 0.7 percent in housing prices compared to March. The index of new home prices declined by 1.2 percent in April compared with the previous month, after a significant increase since October 2019. This decline was concurrent with a decline in the rate of dwellings sold under the “Buyer’s Price” program as a share of all new dwellings sold. Although this rate averaged 41 percent during 2019, and their prices incorporate a significant discount from the market price, the decline in the prices of new dwellings was tiny (about 1.6 percent). This probably indicates that the prices of new dwellings in the free market increased significantly. The increase in housing prices was greater than the increase in rental prices (Figure 19): The Owner-Occupied Housing Services Price (Rent) Index increased at an annual rate of only 2.3 percent in March 2020. As for the ratio of housing prices to the average wage per employee post of Israeli workers, wages increased at a lower rate than housing prices in the reviewed period.

The accelerated increase in housing prices just prior to the crisis was apparently not due to a decrease in supply³³, but to an awakening of demand. In 2019, about 110,000 housing transactions were recorded (an increase of 7.2 percent compared with 2018). The number of transactions continued to increase in January and February 2020 compared to the corresponding months last year, but in March the number of dwellings sold fell to only about 6,600 (32 percent less compared to March 2019), and in April only 2,100 transactions were recorded. The decrease in the number of transactions in the midst of the crisis was due to potential buyers’ uncertainty regarding their employment status, but also due to the fact that during the lockdown it was not possible to visit the properties or the sales agencies, and the selection of apartments by the “Buyer’s Price” winners was postponed. In addition, the execution of transactions was problematic due to the shutdown of services related to the purchasing process, such as legal, realty, and land registration services. In May, about 6,500 transactions were carried out (28 percent less than in May 2019).

Looking to the future, apartment prices will be affected by changes in supply and demand following the COVID-19 crisis. Regarding the impact of the crisis on the construction industry, see the box in Section 2.2.5. In the short term there may be some decline in housing prices, especially in peripheral areas where the supply rose considerably in previous years. Cash flow problems and increasing financing costs may force developers to lower prices at a time when demand is falling due to buyers’ uncertainty and concerns regarding their employment stability and expectations of stagnation or even a decline in their wages. The decline in the demand for housing will be affected first and foremost by the situation in the labor market and by the pace of return to normal. A rise in unemployment, a slowdown in the

The increase in home prices was more rapid than the increase in housing prices.

Figure 19
Index of Home Prices, Index of Housing Prices (new and renewing rental contracts) and the Ratio between Them, January 1994–March 2020



SOURCE: Based on Central Bureau of Statistics.

³³ In 2019, building permits were received for the construction of about 54,500 housing units; construction began on about 51,300 units (a decrease of 2.5 percent compared with 2018); and construction was completed on about 51,700 units (a slight decrease of 1.2 percent compared to 2018).

rate of increase in wages, and an erosion of the public's savings due to declines in the stock market (mainly of those who hastened to withdraw financial investments at the beginning of the crisis) will all affect demand. Conversely, the rise in interest rates on mortgages at the beginning of the crisis was halted, and the basic interest rate level in the economy declined. There may be some increase in the demand for investment apartments as a relatively safe channel following the withdrawal of financial investments by the public at the beginning of the crisis. An analysis of the characteristics of the unemployed shows that the crisis mainly affected weak employees who earn low wages, as well as young and older employees. (For more information, see Box 2 in this report.) Apparently, the percentage of potential home buyers in these population groups is relatively low.

In the long run, and assuming that the labor market recovers in the coming months, the more likely scenario is an increase in housing prices, as a result of the declining supply following the shutdown in planning and the delay in the start of new projects due to uncertainty and the lack of financing. In the first quarter of 2020, there was already a decrease of about 11 percent in the building starts compared to the previous quarter³⁴ (seasonally-adjusted data). In addition, the number of building permits issued during the first quarter of 2020 was 26 percent lower than in the previous quarter. The shutdown in the Planning Authority has created delays in approval of plans and in the advancing of vital infrastructure projects. The work on tenders at the Israel Lands Authority was also halted during the lockdown period. These delays may reduce the housing supply in the coming years due to supply rigidity resulting from the long duration of the planning proceedings.³⁵

In recent years, the government has emphasized finding quick solutions to the housing crisis, and has accordingly sought easier-to-implement solutions that allow for massive construction, especially the rapid planning of large residential complexes on the outskirts of cities and in open spaces. Following much criticism, the Ministry of Housing plans to emphasize making the best use of built-up space. This type of planning is more complex, and therefore takes longer. Due to the budget deficit created by the crisis, the Ministry of Housing plans to discontinue the "Buyer's Price" program, which was the only tool for lowering the price of housing in recent years. Therefore, the likely scenario is a rise in housing prices in the coming years, especially in areas of demand.

2.2.5 Impact of the COVID-19 crisis on the construction industry

Due to the uncertainty regarding the behavior of the COVID-19 virus, it is difficult to assess the point in the health crisis at which the economy currently is and how long the economic crisis will last, but it is clear that it will impact the residential construction industry.

Prior to the crisis, the residential construction industry employed about 80,000 Palestinian workers (of which about 15,000 have permits for lodging within Israel), about 100,000 Israeli workers and about 16,300 foreign workers. The construction industry was excluded from the lockdown because of its importance to the economy, but this was subject to the requirement that the Palestinian workers remain in Israel throughout the lockdown period. Following this decision, lodging permits were issued to an additional 40,000 Palestinian workers. Supporting industries (concrete plants, quarries, aluminum plants, etc.) also received approval to continue full operations.

Despite the industry's exclusion from the restrictions on economic activity, work did not continue as usual. In practice the number of Palestinian workers was much lower than the quota. In mid-April, there were only about 15,000-16,000 such workers. On May 2, only about 13,000 Palestinian workers remained in Israel, and on May 6, there were about 21,000. It should be noted, however, that the period of the lockdown due to the COVID-19 pandemic was a period in which activity at construction sites slows down each year due to a closure of the territories imposed

³⁴ The figure is not final, and as a result of retroactive updates this gap may narrow.

³⁵ On this subject, see for example the 2020 State Comptroller's Report.

during the holidays (the week of Passover and on Memorial Day and Independence Day) and also due to only partial work during Ramadan. From May 31, entrance was allowed for all Palestinian workers who were employed in the construction industry, but a new outbreak of the virus during June, both in Israel and in the Palestinian Authority, threatens the industry's return to full activity.

According to Central Bureau of Statistics data from the Labor Force Surveys, the rate of absenteeism from work for the full week or part of the week for reasons related to the COVID-19 virus among Israeli employees in the construction industry (employees and self-employed) was 30 percent in March, 44.85 percent in April, and 23.7 percent in May.

The Central Bureau of Statistics' flash Surveys of Business in Israel during the COVID-19 Crisis show that less than half of the workers came to work at construction sites at the end of March. The relief that followed gradually improved the situation. Following the Passover holiday, the percentage of workers rose to 55 percent, at the beginning of May it rose to 65 percent, at the beginning of June it rose to 78 percent, and in mid-June it was 85.6 percent. Table 3 shows that the condition of the industry has improved along with the expansion of activity.

The Central Bureau of Statistics' Business Tendency Survey for May indicated optimism for the construction industry's expected activity in June, following a sharp decline in activity in the previous months. However, companies in the industry, especially small and medium-sized companies, reported a worsening of the demand constraint and the nonbank credit limit. According to data from the fifth wave of the Central Bureau of Statistics' Survey of Businesses during the COVID-19 Crisis, which describes the state of the industry at the beginning of June, only 10.4 percent of the companies that participated in the survey reported an increase in the bank credit facility, while 12.4 percent reported a decrease (compared to only 6.6 percent of all companies surveyed). Financing of projects in the construction industry depends, among other things, on the progress of sales and the progress of work, and a halt or slowdown in these two indices can be considered a violation of the banks' conditions for the project's financing, which may result in the termination of financing.

Table 3: The state of businesses in the construction industry according to CBS surveys

Survey period	Expected impact to revenue during the survey's month, as a share of all surveyed companies					Duration the company can continue to operate if the existing situation continues, percentage of all surveyed companies			
	No impact	Up to 25	26-50	51-75	76-100	Up to one	1-3 months	3-6 months	More than 6
		percent	percent	percent	percent	month			
March 30-31	9.6	9.4	32.1	31.3	17.5	56.6	31.4	4.8	6.9
April.21-22	6.6	19.3	24.9	30.2	15.2	36.7	39.5	8.6	10.9
May 5-7	7.3	25.5	28.3	26.7	10.5	23.9	44.8	8.7	17.8
June 1-3	24	28.1	28.5	9.8	3.7				
June 15-17	18.8	29.4	30.3	11.8	7.1				

It should be noted that the construction industry has been less affected than many other industries, and in most projects the impact on activity will mainly amount to a two- to three-month delay in housing delivery. Construction contractors receive compensation according to the volume of work, and if they did not work during the lockdown, their cash flow will be delayed. If they do not have the credit resources to bridge the gap, they may run into difficulties. Developers will suffer from a decrease in cash flow in the absence of sales. They may also be impacted by a delay in the delivery of housing to purchasers, since so far the state has not recognized the COVID-19 pandemic as a "force majeure". Each case of delay will be considered individually, and the construction company will have to

prove that its activities were directly affected by the crisis. It can be assumed that in projects that were in the final stages it will be easier for contractors to prove such a causal link. The Ministry of Justice recommends allowing construction companies a two-month delay in the delivery of dwellings that according to the contract were to be delivered between March 15 and April 1, 2020, without compensation to buyers. If the delay lasts four months, the company will pay a reduced compensation of half of the rent of a similar apartment for the additional two months.³⁶

In terms of construction costs, a real increase in the price of raw materials, most of which are imported from China, is probably not expected, because the factories in China have already returned to full operation.³⁷ In the Central Bureau of Statistics Business Tendency Survey, most of the companies in all size groups reported that they are not constrained in terms of raw materials and equipment. Nevertheless, there may be a temporary increase in transport costs due to disruptions created by the global crisis. The accommodation of workers from the territories in Israel during the lockdown was conditional on the contractors' provision of lodging for these workers for one to two months, which could have increased the cost of labor. For an increase in direct construction costs, developers will receive compensation through the linkage of apartment prices to the Construction Inputs Price Index. Other costs, including additional financing costs resulting from the halt in cash flow during the period when apartments were not sold³⁸ and due to compensation for late delivery of apartments, are unforeseen costs, which could erode the profits of construction companies, especially in "Buyer's Price" projects, in which profit margins are already lower than what is commonly accepted in the industry.

As of the beginning of May, construction companies submitted 5,000 applications to the banks for state-guaranteed loans, but only 1,100 of them were approved (about 22 percent, while in that period about a third of all applications submitted to the state-guaranteed fund were approved) totaling only NIS 600 million.³⁹ According to the Central Bureau of Statistics Survey of Businesses during the COVID-19 Crisis, as of the beginning of June, about 67 percent of companies in the construction industry (compared to 63 percent of all companies that participated in the survey) reported that they had received no assistance, 20 percent had received a state-guaranteed loan (similar to the survey average), and only about 12 percent had received grants (compared to an average of about 20 percent in the survey). From the banks' perspective, the state-guaranteed fund is less suited to the real estate industry, for the following reasons: the interest rate is relatively low compared to what is commonly accepted in the industry given the risk level; no minimum equity investment is required; it does not provide a solution to the Sales Law guarantees, which the bank must provide to apartment purchasers; and the small and medium-sized business fund provides loans of up to NIS 20 million, a small amount in relation to the cost of projects in the construction industry. In the Central Bureau of Statistics Business Tendency Survey, small and medium-sized companies (up to 100 employees) reported an exacerbation of the constraint in obtaining bank credit. These companies also reported a worsening of the low demand constraint. The Ministries of Construction and Finance are promoting the establishment of a dedicated loan fund for construction companies that have run into difficulties due to the crisis. Without a solution to the industry's financing problem, and if the demand for apartments does not return to pre-crisis levels, it is likely that the start of new projects will be postponed. Due to the long timeframe for the preparation for and duration of construction, the housing supply in the coming years may be affected as a result.



³⁶ Under the Sales Law, a construction company must compensate buyers with an increased compensation of 150 percent of the rent of a similar apartment from the first day of the delay in the event of a delay in delivery of over two months.

³⁷ For the time being, imposition of the antidumping levy on cement imports has also not been approved.

³⁸ According to the Ministry of Finance estimate, the developers' revenues from the sale of new apartments in March and April 2020 amounted to only about NIS 3.6 billion and about NIS 1 billion, respectively – a real decrease of 35 percent in March and 80 percent in April compared to the corresponding months last year.

³⁹ At the beginning of June, approved applications accounted for about 52 percent of total applications, so it is possible that the number of approved applications also increased in the construction industry.

2.3 Credit

	2019:2	2020:1
Business sector		
Household sector		
Exposure to real estate		

Because of the sharp decline in business activity and employment due to the COVID-19 crisis, there is increased risk in nonfinancial business credit (which is the equivalent of 68 percent of GDP) and in household credit (which is the equivalent of 42 percent of GDP). The increase in business credit risk is mainly in sectors with exposure to the crisis. In addition, real estate companies' share of business credit remains high. The banking system is a major credit channel for the nonfinancial private sector (households and businesses) (64.2 percent of the debt). During the first quarter, the increase in bank credit continued in view of the steps taken by the Bank of Israel to encourage the provision of credit, compared with a freeze and decline in the balance of nonbank debt.

Due to the crisis, banks approved requests for the deferral of loan repayments by households and businesses. As of the end of June⁴⁰, the balance of credit for which payments were deferred constitutes 14.6 percent of the credit portfolio. In the first quarter financial statements, the banks increased their loan loss provisions to 1.42 percent of the credit balance.

The banks' loan loss provisions total up to 1.42 percent, implying that in their estimation that is the "damage from the crisis", and that this rate can be contained without harming the financial system. On the other hand, debtors accounting for 14.6 percent of the bank credit portfolio requested payment deferrals because of the crisis, with at least some of them thereby just postponing dealing with the problem. It is clear that the deferred credit is subject to increased risk, and therefore the starting point for the realization of the main risk scenario already includes risks that did not exist before the first wave.

2.3.1 General remarks

Outstanding nonfinancial private sector debt amounted to NIS 1,560 billion as of March 31, 2020, the equivalent of 110.2 percent of GDP (a low level by international comparison), an increase of about half a percent compared to the level that was typical of the previous half-year.

The banking system is a major credit channel for the nonfinancial private sector (households and businesses) (64.2 percent of the debt is bank debt). At the start of the crisis, as of the end of February, businesses' bank debt was in a downward trend relative to the beginning of the year. However, in March, partly in view of steps taken by the Bank of Israel to encourage banks to provide credit⁴¹, the balance of private debt increased by about 0.8 percent—the result of an increase in bank credit to large and medium-sized businesses and for housing, a low increase in nonhousing consumer credit provided by institutional entities, and an offset of the increases by a decline in the other credit channels.

⁴⁰ Supervisor of Banks Fair Value Forum Presentation, July 2020, on the Bank of Israel website.

⁴¹ For a description of the steps and a global comparison, see the *Survey of Israel's Banking System* for 2019.

Credit risk increased due to the crisis. Starting in March, the rate of requests for the deferral of loan payments increased, based on the outline formulated by the Central Bank and adopted by the banking system.⁴² As of the end of June, the balance of credit for which payments were deferred amounted to 14.6 percent of the total bank credit portfolio. Looking to the future, the banks increased the loan loss provisions in the 2019 financial statements and in the first quarter of 2020 to a rate of 1.42 percent of the credit portfolio (Table 4). Most of the increase is in respect of group provisions for credit losses. The group provision is calculated in Israel by applying a coefficient calculated by the Bank to the projected loss rate in each segment according to the Bank's past experience and the Supervisor of Banks directives. Of the group provisions made by the banks, a significant rate is in respect of commercial credit.

Table 4: The crisis's effect on loan loss provisions*, the five banking groups

	March 31, 2020	December 31, 2019	March 31, 2019	December 31, 2018	2015–2019 average
Hapoalim	1.07	0.44	0.17	0.21	0.194
Leumi	1.2	0.22	-0.03	0.18	0.135
Discount	1.42	0.4	0.33	0.32	0.316
First Int'l.	0.71	0.16	0.17	0.19	0.124
Mizrahi-Tefahot	0.66	0.18	0.15	0.16	0.14

* The provision as a share of average outstanding credit, and the 2015–2018 average relative to outstanding balance-sheet credit.

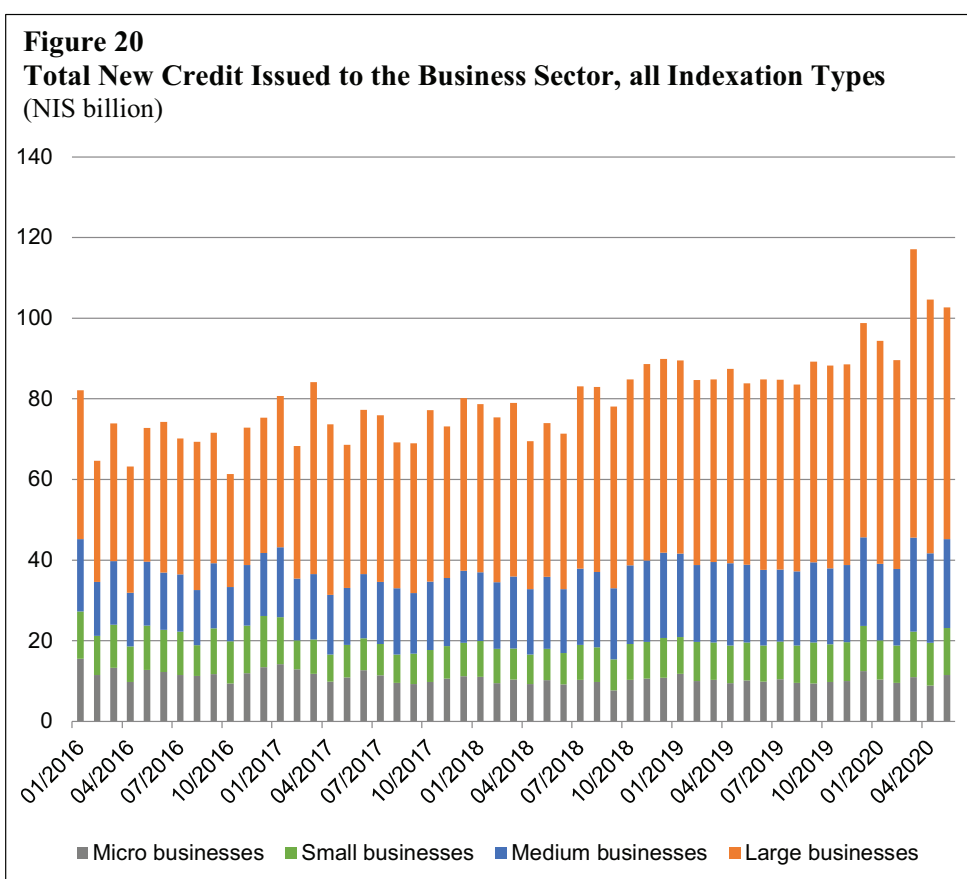
SOURCE: Financial statements.

2.3.2 Credit to the nonfinancial business sector

At the end of the first quarter, outstanding nonfinancial business sector debt totaled NIS 969 billion. The construction and real estate industry accounts for the largest share of the debt (24.76 percent). The debt increased by 1.2 percent in the first quarter of 2020 (compared with 3.8 percent in 2019 and 6.7 percent in 2018). The increase in business sector debt was mainly due to the increase in bank credit to the nonfinancial business sector, which totaled NIS 478 billion after a decline of 0.4 percent in February and an large increase of 4.2 percent in March (the monthly rate of increase, which was also its quarterly rate). This is partly a continuation of the steps taken at the beginning of the crisis to encourage the provision of credit, mainly by utilizing precrisis bank credit facilities for large and medium-sized businesses (Figure 20). As a result, bank credit as a share of total credit to the business sector rose to 49.3 percent at the end of the first quarter (compared with 47.7 percent in 2019 and 47.3 percent in 2018). In contrast to the increase in bank debt, the nonbank channel froze and the debt balance actually decreased by about 2 percent.

In the banking system, the balance of credit to small businesses declined during March and April by a rate of 10.6 percent in annual terms, compared with a decline of 6 percent in the two preceding months. This decline preceded the activation of the Small Business Support Fund, and expectations of the fund's activation may provide a partial explanation. From April, the trend changed following the activation of the fund. The Bank of Israel is monitoring this movement in the balance of credit to small businesses throughout the crisis, because bank credit is still the main source of credit for this sector despite the shifting trend to the nonbank channel prior to the crisis. Although in April and May the interest rate on credit for micro, small and medium-sized businesses in the unindexed shekel

⁴² <https://www.boi.org.il/en/NewsAndPublications/PressReleases/Pages/7-5-2020b.aspx>



segment declined, the interest rate for the small business sector remained higher than the interest rate for large and medium-sized businesses, due to the risk attributed to this sector. As of the end of June, the balance of credit to small businesses for which payments were deferred amounted to 20.7 percent of the total credit portfolio—a significant rate, which indicates the risk in the portfolio.

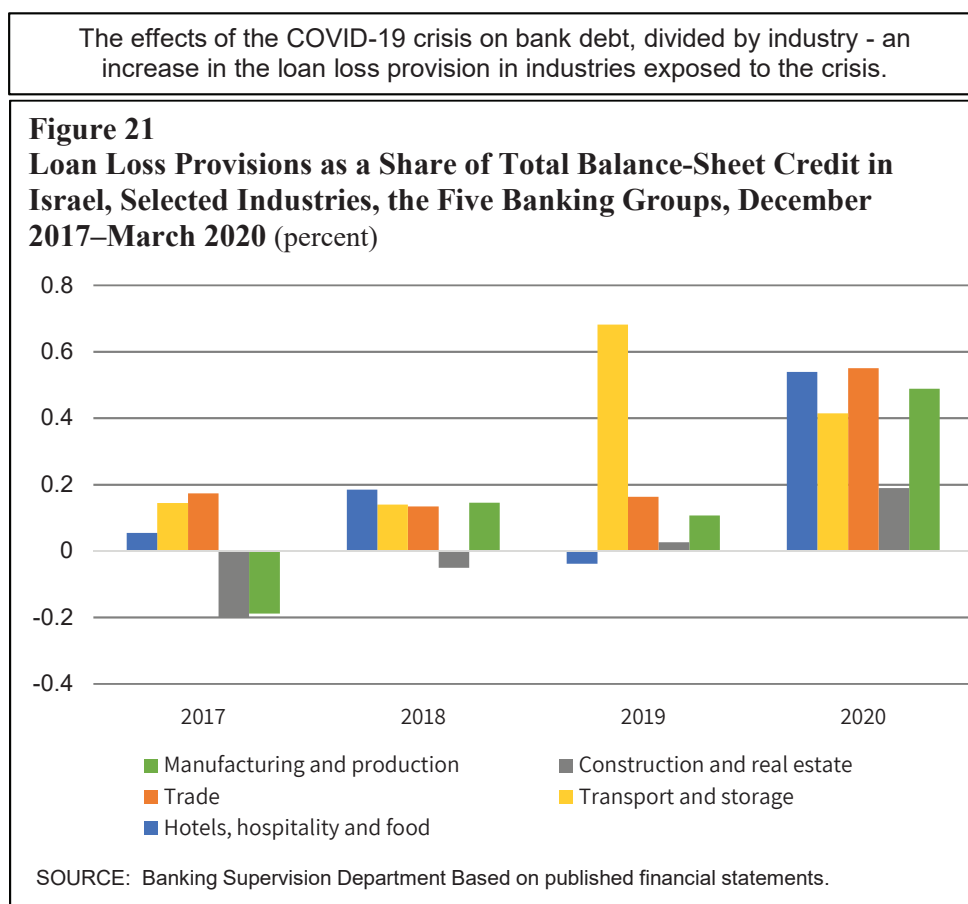
Due to the crisis, the risk of business sector debt (large and medium-sized businesses) has increased. Around the world, and also in Israel, the industries most exposed to the crisis are gas and oil exploration, hotels, investment and holdings, trade and services, and transportation and aviation. In Israel, there is the added sensitivity of the construction and real estate industry due to its large share of private debt and due to other possible effects of the crisis on the industry (see the Box “Impact of the COVID-19 Virus on the Construction Industry” later in this publication). In the banking system, the large and medium-sized business sector was characterized in the previous year by good credit quality, with a slight increase in the risk profile in the second half of 2019.⁴³ The crisis began to manifest itself in the companies’ financial statements for 2019, with an increase in the number of public companies that added remarks and Going Concern warnings, especially in industries exposed to the crisis.⁴⁴ Bank credit is a major source of financing, ranging between 40 percent and 90 percent of total sources for manufacturing, transportation and storage, commerce, hotels, construction and real estate, and business and other services. As of the end of June,

⁴³ The loan loss provisions from the 2019 end-of-period balance increased to 0.17 percent among medium-sized businesses percent (compared with a negative rate in 2018). Interest rates rose to of 2.8 percent for large businesses and 2.2 percent for medium-sized businesses (compared with 2.6 percent percent and 2.1 percent percent in 2018). Other indices in respect of write-offs and impaired credit remained stable.

⁴⁴ As of the 2019 statements, 43 going concern warnings were added in the following industries: technology (+5), construction and real estate (+2), biomed (+2), investment and holdings (+5), trade and services (+1).

the balance of commercial credit⁴⁵ for which payments were deferred was 5.8 percent of the total credit portfolio.

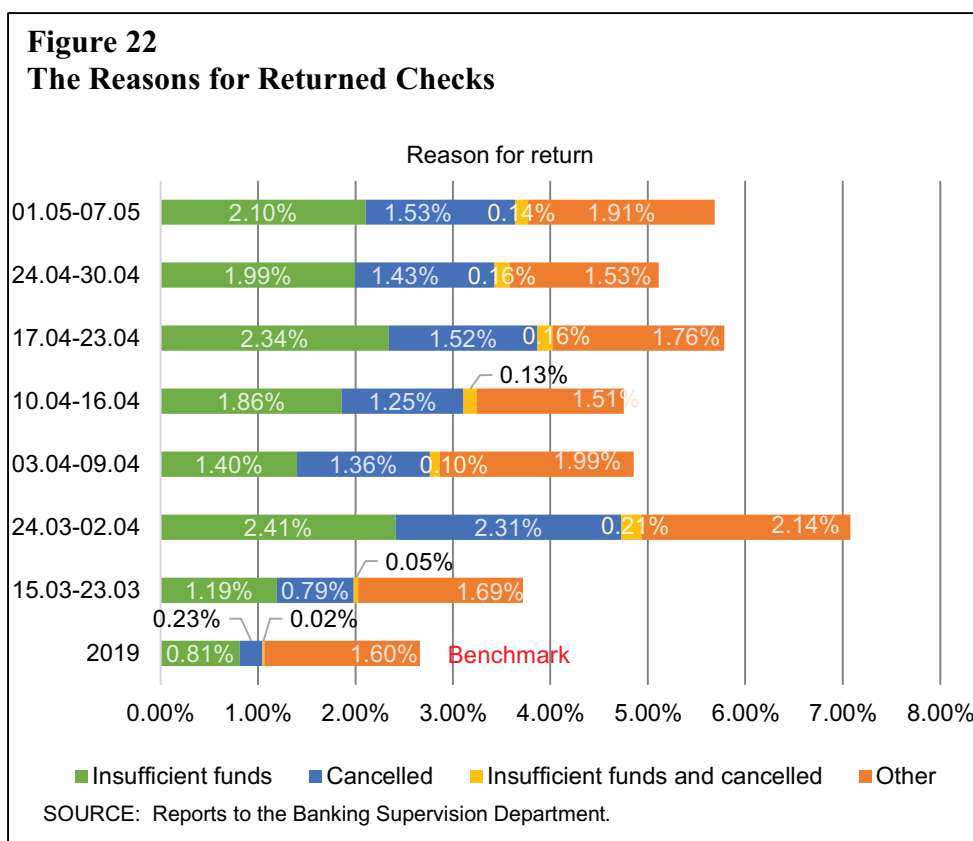
Therefore, along with the increase in commercial credit, the banks increased the rate of loan loss provisions from a forward-looking perspective (Table 4)⁴⁶, especially in industries that are at risk due to the crisis, as well as in respect of the construction and real estate industry (Figure 21).



After the easing of the lockdown restrictions, the initial immediate indications that emerged from the Central Bureau of Statistics Business Tendency Survey showed a possible start of the recovery of activity in parts of the economy. However, the construction and real estate industry reports a bank and nonbank credit constraint, a trend that may also reflect increased risk in the industry. The small and micro business sector is also characterized by financing difficulties, a slowdown in activity, and delays in the return to normal activity. Banking Supervision Department data indicate that the number of bounced checks, mainly due to insufficient funds, also indicates a certain increase in risk (Figure 22). Their absolute number increased during the crisis to a peak in late March and early April, and stabilized during May at a more moderate level that is still higher than in normal times.

⁴⁵ The sector calculation is according to the management’s approach.

⁴⁶ See also the Supervisor of Banks Fair Value Forum Presentation, July 2020, on the Bank of Israel website.



In contrast with the trend of increasing bank credit (for large and medium-sized businesses), nonbank credit, which accounts for 32.5 percent of private debt, showed a downward trend, which accelerated during the first quarter (from 0.1 percent in February to 4.1 percent in March).⁴⁷ This decline, which as of the first quarter is part of the effects of the crisis, contributes to the slowing trend from previous years in the rate of increase of nonbank debt relative to GDP (this debt-to-GDP ratio is 22.86 percent). As of the first quarter of 2020, the balance of nontradable bonds and nonbank loans amounts to NIS 112 billion, following a 4.9 percent decrease compared to the previous quarter. This is compared with a growth trend of 8.4 percent in 2019 (from a rate of 2.5 percent in 2018). At the same time, the balance of tradable bonds, which amounted to NIS 204 billion in the first quarter, also showed a downward trend (0.4 percent) compared with the previous quarter. The risk involved in this debt increased in the first quarter due to the crisis. (For details of trends in corporate bonds, see the box “Developments in the Corporate Bond Market during the Crisis”.) Specifically, as of May, yields in the construction and real estate industry rose to a peak during March and fell back, but have not yet completed the decline to the low level that preceded the crisis (mainly the development and construction companies).

In general, in the first quarter there was an increase in credit risk to the bank and nonbank (nonfinancial) business sector. If the crisis continues, and there is not a return to rapid GDP growth, the losses may increase, and the nature of the crisis will necessitate a transition to new models for analyzing the debt risk.⁴⁸ In addition to the above,

⁴⁷ A decrease of 2 percent in the quarter.

⁴⁸ Questions that may arise regard the nature and liquidity of encumbered assets and the distinction between flexible and rigid liabilities. Moreover, the crisis creates uncertainty regarding revenues from current operations, the ability to realize investments, and the possibility of raising financing. In addition, there may be an impairment of the value of the assets measured at fair value (especially investment property), due to a decrease in expected receipts and an increase in the capitalization rate (in respect of the risk premium).

risks arising from operational facilitations allowed by regulators during the closure must be added, as well as legal challenges that are typical during a time of crisis. The IMF addressed the possibility that a proliferation of debt restructuring arrangements would lead to a re-examination of these arrangements (debt resolution framework). The increase in the loan loss provisions presented by Israeli banks in the first quarter is consistent with a forward-looking approach to provisions and short-term sensitivity tests.⁴⁹

2.3.3 Credit to households

At the end of the first quarter, outstanding household credit totaled NIS 592 billion. The main component of this credit (88.5 percent) is bank credit. The household debt-to-GDP ratio is 42 percent, lower than the debt level measured in other advanced economies. Nevertheless, household credit has characteristic risk due to the possible connection between the rapid expansion of this debt and the risk of financial crises and prolonged low periods.⁵⁰

Outstanding housing credit at the end of the first quarter totaled NIS 394 billion. In Israel, the housing credit to GDP ratio is 27 percent, low by international comparison. Also, considering the steps taken in recent years, the housing credit portfolio is assessed by the Banking Supervision Department as meeting acceptable quality indices.⁵¹ However, the exposure to this credit is increasing given its high share of total credit to households, its significant share of nonfinancial private debt together with the construction and real estate industry, and the fact that the main channel for housing credit remains the banking system. The number of mortgage transactions, which peaked in December 2019, declined slightly in the first two months of 2020, but was still higher than the monthly average in 2019. Specifically: in March, influenced by transactions being brought forward during the lockdown, the total number of mortgages was one of the highest in recent decades – about NIS 9 billion.

The crisis has raised housing credit risk. A significant increase in unemployment could be a major cause of borrowers' default, as also shown by the macroeconomic stress scenario regarding the housing credit portfolio conducted by the Banking Supervision Department in 2018.⁵² As of the first quarter, loan loss provisions as a share of total housing credit in the banking system increased (a rate of 0.8 percent compared to 0.03 percent in 2019 and 0.04 percent in 2018⁵³), and the rate of requests for payment deferrals on this credit is high (as of the end of June, the balance of credit for which payments were deferred amounted to 24.3 percent of the housing credit portfolio). The increase in LTV continued – to rates between 60 percent and 75 percent for new mortgages—partly due to the increase in the share of “Buyer’s Price” mortgages⁵⁴ (Figure 23). The average size of mortgages increased to NIS 789,330, compared to NIS 702,550 in 2019.

Nonhousing credit to households totaled NIS 198 billion at the end of the first quarter. This credit declined by 1.9 percent in the first quarter. Following a slight increase in January, there was a decline of 0.5 percent in February followed by an even stronger decline of 1.7 percent in March. The balance of bank credit, which is the main source of nonhousing credit (77 percent), declined in the first quarter (mainly in March), and loan loss provisions as a share

⁴⁹ Consistent with the international publications of the Basel Committee on Supervision of Banks and the Financial Stability Board, which encouraged easing of regulatory requirements and an easing of the accounting principles beyond what is required for stability needs, subject to faithful representation of the companies' financial position.

⁵⁰ See footnote 23 of the 2019 *Financial Stability Report*.

⁵¹ See the Bank of Israel's *Annual Report* for 2019, Chapter 4.

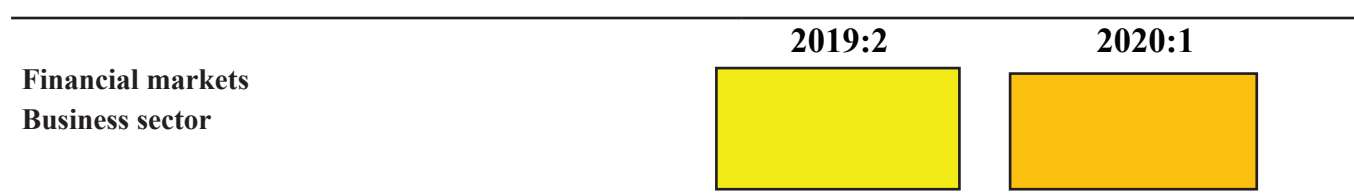
⁵² The Bank of Israel website, Supervisor of Banks, press release dated May 19, 2019.

⁵³ See also, Supervisor of Banks Fair Value Forum Presentation, July 2020, on the Bank of Israel website.

⁵⁴ The upward trend in the percentage of mortgages for a single apartment with an LTV greater than 50 percent as a share of total mortgages continues from previous years and amounts to 46.55 percent as of February (the annual average is 46.73 percent, compared to 44.97 percent last year, 42.4 percent in 2017 and 39.88 percent in 2016). This is in view of the easing in the calculation of risk assets for housing loans with an LTV of 60 percent-75 percent, (a trend that began in 2018).

of total nonhousing credit increased compared to the previous year (a rate of 1.34 percent compared to increases of 0.63 percent in 2019 and 0.87 percent in 2018⁵⁵). As of June, the balance of nonhousing credit for which payments were deferred amounted to 8.5 percent of the total portfolio in which the payments were deferred. The credit card companies, whose credit granted in the previous year was assessed at a high risk level⁵⁶, put a freeze on the granting of credit in the first quarter, and the debt balance declined by 5.7 percent. At the same time, the financial statements published for the first quarter show an increase in the recognition of losses. At this stage the institutional investors have increased nonhousing credit by a low rate of 3.9 percent (compared with a 25 percent increase over the previous 12 months). It should be noted that the sharp increase in the number of unemployed persons due to the crisis increased the credit risk of households, and especially of low-income earners, who account for a higher share of those put on unpaid leave than others, and whose share of consumer debt has increased in recent years⁵⁷ (See Box 2 in this report).

2.4 Liquidity



Liquidity risks in the financial markets were reflected during the crisis: Institutional investors with a short investment horizon sold large volumes of financial assets—mainly government and corporate bonds—in the face of a limited supply of buyers. Government bond purchases by the Bank of Israel helped provide liquidity and calmed the market.

2.4.1 Market liquidity

The turnover rate (trading turnover divided by market value) in the markets just prior to the crisis was relatively low from an historical perspective and also by international comparison.⁵⁸ The level remained very low until March, but in the middle of the month trading turnover increased sharply, resulting in a sharp rise in the turnover rate. Most of the increase is reflected in the government bond market, and high levels were also observed in the stock and corporate bond markets (Figure 24).

The context for the increase in trading turnover in government bonds was the large redemptions in mutual funds, and to a lesser extent the redemptions of advanced study funds and provident funds—especially those classified as specializing in (indexed and unindexed) government bonds. To illustrate how significant the redemption component in the government bond market was, Figure 25 shows the turnover of the indexed government bond market and the redemptions and fundraising (in absolute value). It is obvious that the redemptions were indeed a significant part of the trading volume in the government bond market—32 percent of total daily trade in indexed bonds. A similar picture was also observed in the unindexed bond market. For comparison, the average and standard deviation from mid-

⁵⁵ See also, Supervisor of Banks Fair Value Forum Presentation, July 2020, on the Bank of Israel website.

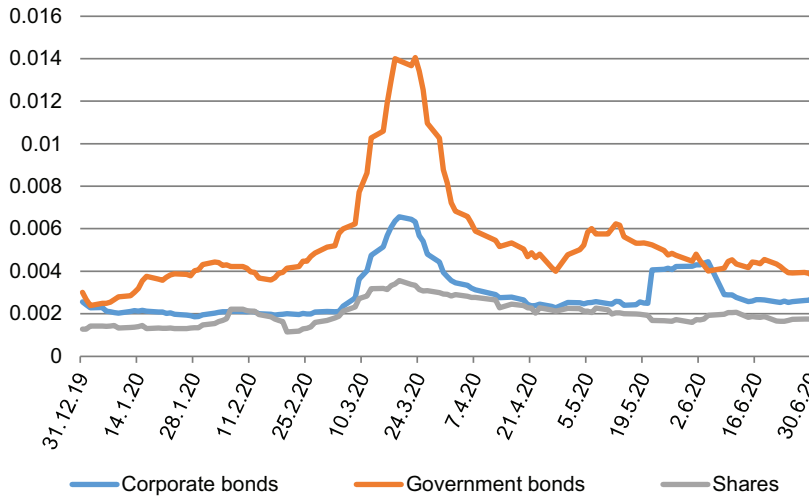
⁵⁶ Bank of Israel *Annual Report* for 2019, Chapter 4.

⁵⁷ *Financial Stability Report* of June 2019, Bank of Israel, pp. 48–50; *Financial Stability Report*, December 2019, Bank of Israel, p. 27; Labib Shami, Policy Paper 01.19 “Household Debt in Israel”, Taub Center for Social Policy Studies in Israel, January 2019.

⁵⁸ See the chapter on Liquidity in the *Financial Stability Report* for the second half of 2019.

The turnover rate increased sharply during the crisis, particularly in the government bond market.

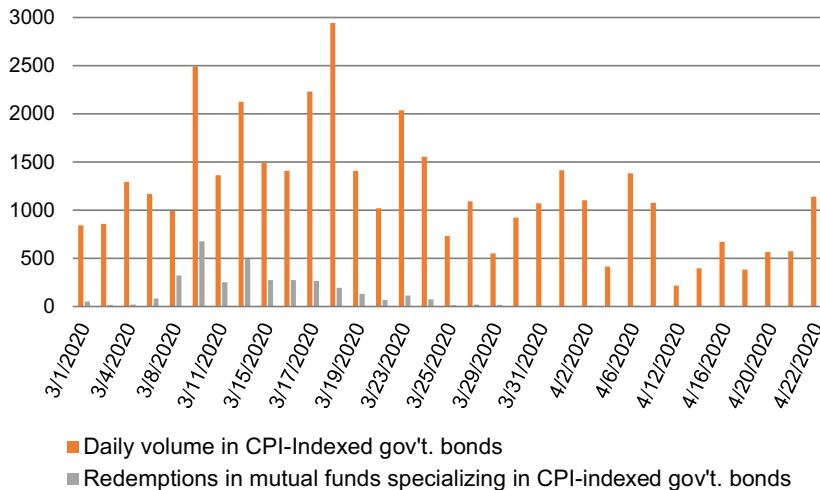
Figure 24
Trading Turnover Divided by Market Value: Government Bonds, Corporate Bonds, and Shares January 1, 2020–June 30, 2020 (10-day moving average)



SOURCE: Based on reports to the Tel Aviv Stock Exchange.

Mutual fund redemptions were a significant part of the trading volume in the government bond market.

Figure 25
Daily Trading Turnover in CPI-Indexed Government Bonds, and Redemptions in Mutual Funds Specializing in CPI-Indexed Government Bonds, March 1, 2020–April, 2020



SOURCE: Bank of Israel calculations.

2008 until the end of 2017 were 3.5 percent and 3.6 percent, respectively, in unindexed bonds and 6.2 percent and 6.3 percent, respectively, in indexed bonds—a difference of more than two standard deviations. As such, the redemptions caused a significant shock to liquidity in the government bond markets.

Most of the massive redemptions took place between March 8 and March 18, 2020, and towards the end of March the massive redemptions stopped. Due to the liquidity crisis, the redemptions were accompanied by a significant increase in yields in the government bond market, which motivated the Bank of Israel to intervene in this market by purchasing high volumes of bonds in the secondary market, starting on the 15th of the month. On March 23, the Bank even announced this officially, and committed to the purchase of government bonds totaling up to NIS 50 billion.⁵⁹

Liquidity problems also led to a rapid rise in yields in the corporate bond market. Just prior to the crisis, mutual funds held about a third of the total market value of corporate bonds, and the bonds constituted about a third of total mutual fund assets. Similar to developments in the government bond market, the large redemptions in the mutual funds were reflected in large trading volumes and were accompanied by increasing yields.

According to reports by public companies, during the first quarter of 2020, the liquidity of the companies improved, as measured as the ratio of cash and cash equivalents to current liabilities. The median value increased by about 7 percentage points, a result of accumulating cash through financing operations (such as issues of stocks or bonds, or increased bank credit). This behavior may indicate that the companies reacted to the uncertainty, which increased during the first quarter, by replenishing cash through the utilization of existing lines of credit, the creation of new lines, etc. This behavior is consistent with the analysis presented in Box 4, which reviews the resilience of the public companies in the context of the COVID-19 crisis, and mainly characterizes companies that expect low capital vulnerability, but may face a liquidity problem due to the crisis.

2.5 Interconnectedness



Interconnectedness in the domestic financial system has risen slightly. Market-based indices have indicated a sharp rise in interconnectedness during the crisis, but with lower probabilities than those observed in the 2008 financial crisis. The indices based on financial statements and accounting information, which reflect direct and indirect exposure within the financial system, have risen slightly in recent years and are close to the long-term average.

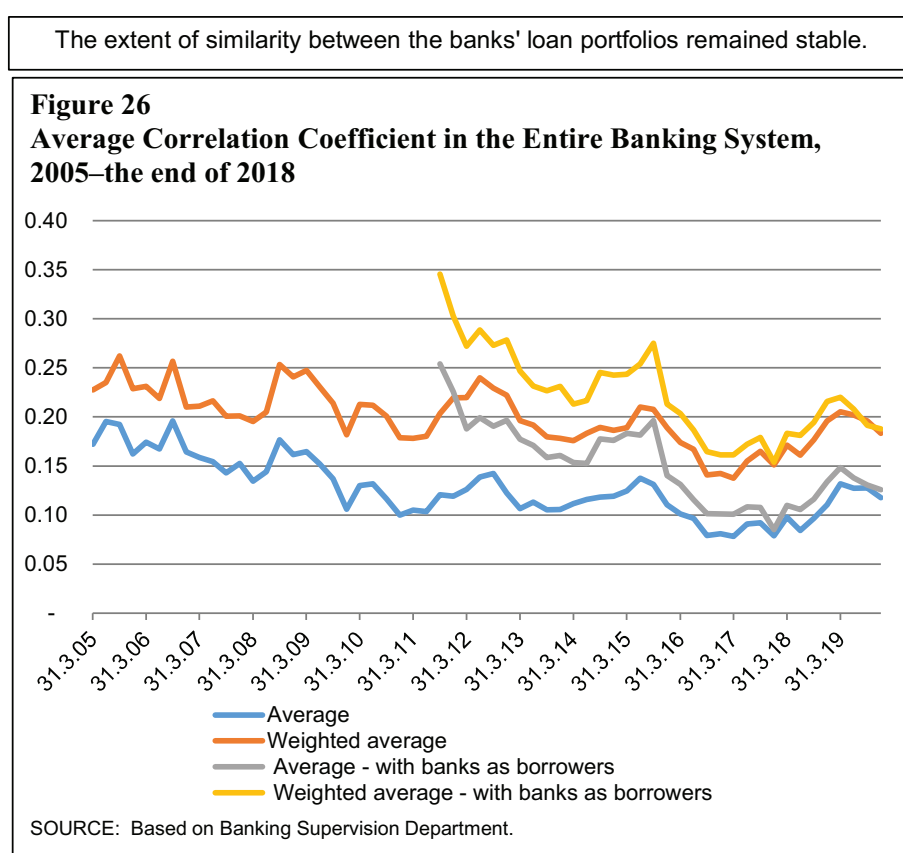
Interconnectedness in the financial system is a structural channel of exposure to risk, which exists to a moderate degree in the Israeli economy. The level of interconnectedness in the financial system—and the resulting potential for contagion within it—is important for assessing its exposure to risks and its level of economy-wide vulnerability (systemic risk). The system’s interconnectedness is created through two main channels: (1) directly, through the exposure of one financial institution to another; and (2) indirectly, through exposure of financial institutions to a common third party.

⁵⁹ For more information, see: “The Effect of the Bank of Israel’s Intervention in the Government Bond Market”, a memorandum published on June 3, 2020 on the Bank of Israel website. <https://www.boi.org.il/en/NewsAndPublications/PressReleases/Pages/3-6-2020A.aspx>

2.5.1 Direct exposure and indirect exposure

The downward trend in the banks' direct exposure to the institutional investors continued. The latest data (September 2019) show that the rate of the banks' holdings in the securities of the financial entities declined to just 0.28 percent of the total securities held by the banks. However, the institutional investors' exposure to the banking system increased in recent years, with the latest data (September 2019) showing that 13.2 percent of their total holdings are in banks' securities.

The indirect exposure channel is partly reflected in the common exposure in respect of overlapping credit portfolios.⁶⁰ The downward trend in the correlation between the banks' loan portfolios, which has been observed over a long period, was halted at the end of 2016, and the correlation has since risen (Figure 26), due to the renewed growth in credit to large borrowers during 2018. The increasing proximity of the correlation coefficient that includes the banks as borrowers to the one that does not include them (the broken line versus the solid line) indicates that over a long period the banks reduced the similarity between each bank's exposure composition to other banks, even if not the total exposure itself.



⁶⁰ For more information, see Chapter 1 of "The Banking System in Israel, 2018 Annual Review".

The index is calculated in the following steps:

1. Calculation of the correlation coefficient between the credit portfolios of each bank with each of the other six banks in each quarter;
2. Calculation of the average correlation coefficient for each bank, weighted according to the other bank's assets.
3. Calculation of the correlation coefficient for the entire system, by calculating a weighted average of each bank's average correlation coefficient, weighted by the assets of the banks.

In mid-2011, an obligation was added to report the extent of the exposure among the banks, which created a break. We therefore present the series that includes the banks as borrowers alongside a series that does not include them (a series without a break).

The data for the third quarter of 2018 are not available, and instead we used the average values of the second and fourth quarters.

2.5.2 Market indices for assessing systemic risks and interconnectedness⁶¹

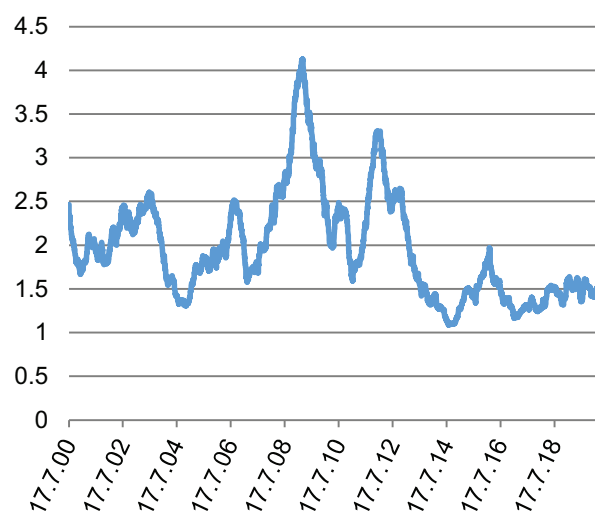
The CoVaR index ('Conditional Value at Risk' or more precisely 'delta-CoVaR') for systemic risk is based on stock trading data, and measures the negative impact expected to the financial system in a stress scenario, as dependent on an adverse stress scenario that occurs at one of the main financial institutions in the system, beyond what is expected in a regular situation.⁶² Our conclusion is that the greater the impact, the greater the institution's contribution to the systemic risk.⁶³

An examination of this index over time and in the second half of the past year shows that each institution's contribution is consistent with its size, even if not absolutely.⁶⁴ During March, the index showed that the level of interconnectedness in the system soared to very high values, although lower than those observed during the 2008 financial crisis. With calm in the markets, the index began to decline, but even at present its values are relatively high, and consequently, the risk associated with systemic events, such as the COVID-19 crisis, has not disappeared.

Indices of banking system stability: In the CIMDO

approach, we estimate the mutual effects that one financial institution has on another.⁶⁵ The analysis indicates that during the crisis, there was an increase in the common probability of a severe adverse impact to the entire financial system simultaneously, which at its peak reached a level of two percent probability of a severe adverse impact to all banks simultaneously, one percent probability of a severe adverse impact to all insurance companies simultaneously, and half a percent probability of the occurrence of both events. The supplementary index of the number of additional financial institutions that may be affected in the event of an adverse impact on one institution reached a peak of 3 (Figure 27).

Figure 27
The Number of Financial Institutions That Will Be Impacted if One Institution is Impacted, July 2000–June 2020



SOURCE: Bank of Israel calculations.

⁶¹ This index was built with the assistance of the Statistical Methods and Data Science Unit of the Information and Statistics Department.



⁶² This index does not provide a leading signal for crisis situations, but it is important for their monitoring, enables real-time examination of the relative contribution of each financial institution to the systemic risk, and helps set priorities in supporting them in times of crisis.

⁶³ For more information on the index and how it is calculated, see Box 2 in the *Financial Stability Report* for the first half of 2019.

⁶⁴ See the Box in the *Financial Stability Report* for the first half of 2019. In that box we present the relationship between the characteristics of the financial institutions and their contribution to systemic risk, as measured by the CoVaR.

⁶⁵ According to this approach, we look at the entire financial system as an asset portfolio consisting of the institutions' stocks, and there is a correlation between the assets in the portfolio. Therefore, the performance of this portfolio (that is, of the entire system) is dependent not only on the performance of each institution separately, but also on the correlations between the institutions' performances. As the goal of this tool is to assess systemic risks, we are particularly interested in the negative stress scenarios possible in the "portfolio", the mutual dependence among the institutions, and an understanding of how this dependence creates a channel in which a shock to one financial institution is liable to develop into an adverse impact on another financial institution—and even on the entire system.

3. The resilience of the components of the financial system

	2019:2	2020:1
The banks		
The insurance companies		

The opening position of the banking system and insurance companies leading up to the crisis was good, due to the continuous improvement of capital in the banks and insurance companies. However, the crisis has hurt the banks' profitability, and is expected to be reflected in an increase in loan loss provisions in the future. The consequences of the crisis are reflected in the deterioration in the credit portfolio quality indices of the five banking groups. Loan loss provisions as a share of total credit to the public increased to a level of 1.03 percent, compared with an average of about 0.17 percent between 2015 and 2019, a deterioration that is evident in all the activity segments. Insurance companies have also been impacted, especially in their nostro portfolios, because of the declines in financial asset prices.

3.1 The banks

The Israeli banking system entered the COVID-19 crisis with a good starting position. The crisis is expected to lead to the realization of market and credit risk, which will most likely be reflected in a significant adverse impact to the banks' profitability and an increase in loan loss provisions.

The bank credit portfolio has grown in recent years and its composition has changed. This development, along with the good macroeconomic situation just prior to the crisis, led to a decrease in credit risks. The liquidity level of Israeli banks is high and is supported by stable and decentralized retail deposits.

In 2019, the Israeli banking system maintained its resilience and stability, while continuing to adapt to the changing business and competitive environment and technological changes. Owing to these developments, the COVID-19 crisis hit Israeli banks at a good starting point. This has enabled the Bank of Israel and the Banking Supervision Department to take a long series of measures aimed at assisting the economy by expanding the supply of credit to households and businesses. In this context, there have been changes in the characteristics of the Israeli banking system. Notable examples are the improvements in the quality and volume of bank capital and in the quality and decentralization of the credit portfolio; streamlining of the banking system through a reduction in the workforce and the number of branches, while increasing the range of banking services available through digital means; and improvements in risk management systems.

The favorable macroeconomic environment in the years leading up to the crisis also had a positive effect on the banking system's performance. It contributed to the improvement of bank credit quality, and led to a decline in loan loss provisions. The credit provided by the banks to all activity segments increased, and generated income from interest and commissions for the banking system, so that the profitability of the banking system in those years stabilized at an adequate level even by international comparison.

Since the outbreak of the COVID-19 pandemic in Israel, economic performance has been significantly impacted, but the strong condition of the banking system just prior to the start of the crisis has made it possible for the Bank of Israel and the Banking Supervision Department to act, through a long series of measures, with the aim of reducing the damage to the economy and expanding the supply of bank credit to households and businesses. In this context, the banks provided very significant amounts of credit within a few weeks, equivalent to the amount of credit granted

in two quarters during normal times. This coincides with a significant increase in the public's deposits in the banks originating from assets withdrawn from the capital market.

Looking to the future, the COVID-19 crisis is expected to lead to the realization of market risk and credit risk, which will most likely be reflected in a significant impact on the banks' profitability and an increase in loan loss provisions.

3.1.1 Business results

The banking system's profitability has been good in recent years, and was greatly affected by the increase in credit provided by the banks to the public, low loan loss provisions, and the banks' streamlining. The net profit of the five banking groups increased in 2019 compared with the previous year (4.1 percent), to about NIS 9.5 billion. The banks continued to show adequate profitability, and the return on equity was about 8.2 percent, slightly below the average of the last decade (about 8.7 percent). The banks' profitability was positively affected in 2019 by an increase in net interest income (5.2 percent), mainly due to the increase in the volume of credit provided to the public in Israel and a slight decrease in operating expenses (1.1 percent). The COVID-19 crisis began to be felt during the first quarter of 2020 and had a negative impact on the banking system's profitability. This was mainly reflected in the significant increase in loan loss provisions (about 700 percent) compared to the corresponding period last year, in all the banking groups, both for various business sector industries and for the household sector. The increase in loan loss provisions was the main cause for the fall in the net profit of the five banking groups in the first quarter of 2020, to about NIS 770 million, and for the return on equity of about 2.6 percent (in annual terms)—the lowest figure since 2008.

3.1.2 Capital adequacy and leverage

The accumulation of capital in the banking system, together with the tightening of the minimum requirements and the demand for additional capital confinement against the unique characteristics of the banking sector and the domestic economy, enabled the Banking Supervision Department in the first days of the COVID-19 crisis (similar to other supervisory authorities around the world) to reduce the regulatory capital requirements for an expansion of bank credit to the public. This was an anticyclical move aimed at enabling banks to provide additional credit, and to allow them to incur significant losses. At the same time, the Banking Supervision Department instructed the heads of the banks to re-examine the policy of dividend distribution and share buybacks. (For more information, see the press release dated March 29, 2020.) This directive prompted the banks to announce that they do not intend to distribute dividends in 2020 in view of the COVID-19 crisis.

The trend of improvement in the quality and volume of bank capital continued throughout 2019, along with their continued support for economic growth and an increase in the distribution of profits to the investing public. The equity of the five banking groups increased in 2019 by about 3.2 percent (about NIS 3.7 billion). The increased equity resulted in an additional increase in the Tier 1 equity ratio in all the groups, and its aggregate value at the end of 2019 was about 11.2 percent, compared to about 10.8 percent at the end of 2018.

At the end of the first quarter of 2020, the total equity of the five groups amounted to about NIS 120 billion, an increase of about 3 percent (in annual terms), compared with an average growth rate of about 6.4 percent in the last three years (Table 6). The moderate increase in equity is due to a low accumulation of profits in view of the increase in loan loss provisions and the sharp decline in net profit. Despite the increase in equity, the Tier 1 equity ratio declined during the first quarter of 2020 to about 10.6 percent, compared with 11.2 percent in December. This is partly due to very significant growth in the amount of risk assets in the reviewed period (about 13 percent in annual terms). The equity ratio of all the banking groups remains above the original regulatory capital requirements.

3.1.3 Credit risk

The bank credit portfolio has grown in recent years and its composition has changed, which has led, along with the good macroeconomic situation just prior to the crisis, to a decrease in credit risks.

The balance sheet credit of the five banking groups increased in 2019 by about 4.4 percent, similar to the growth rate in recent years (an average annual growth rate of about 4.3 percent in the years 2014–2018), and amounted to about NIS 1,061 billion. The increase in credit in 2019 was partly due to a record amount of new mortgages taken out, which was reflected in growth of about 7.6 percent in the housing credit portfolio. At the same time, credit to the business sector grew by about 4.2 percent during the year, led by the construction and real estate industry, whose credit increased by about 8.4 percent, against near-zero growth rates that were recorded in the consumer credit portfolio during the year.

Even during the first quarter of 2020, the banks continued to serve as the economy's main financial intermediary, despite the impact of the COVID-19 crisis on the economy, as balance sheet credit increased by about 12.6 percent⁶⁶ (in annual terms), to about NIS 1,095 billion at the end of the first quarter of 2020. The main growth was due to increases in business credit (16.4 percent), housing credit (9.2 percent), and credit to abroad (36.8 percent).⁶⁷ On the other hand, consumer credit decreased by about 12.7 percent. The significant growth of business credit, totaling about NIS 19 billion was also based on the utilization of credit facilities provided to companies before the crisis.⁶⁸

Credit to the business sector

Credit to the business sector grew during the first quarter of 2020 by about 19 percent. The growth rate of business credit was significantly different between the various industries. Most of the growth was due to the increase in credit to the large business sector, which increased during the first quarter by about 45 percent. This was led by the two largest banking groups, whose increase in credit provided to the large business sector reached about 80 percent of the total increase in the balance of credit to this sector. In addition, credit to the medium-sized business sector grew by about 3 percent, while the balance of credit to the small and micro business sector declined by about 2.4 percent in view of the anticipated start of activity of the state-guaranteed fund for small and medium-sized businesses (as detailed in the section on “Credit Granted by the Banking System during the COVID-19 Crisis”).

Credit quality indices just prior to the crisis indicate a good quality credit portfolio from a historical perspective, which was reflected in the stability of most of the indices. However, the development of the COVID-19 virus had a rapid and powerful impact on the global and Israeli economies. The consequences of the COVID-19 crisis are reflected in the worsening of the credit portfolio quality indices of the five banking groups. Loan loss provisions as a share of total credit to the public rose to a level of 1.03 percent, compared with an average rate of about 0.17 percent between 2015 and 2019, an adverse impact seen in all activity segments. The source of the increase in this ratio is an increase of about NIS 82 billion in total loan loss provisions of the five banking groups, which was mainly due to loan loss provisions on a group basis (about 80 percent). The ratio of net write-offs in the entire credit portfolio also increased to 0.24 percent, compared with an average rate of about 0.15 percent in the years 2015–2019. The remaining loan loss provisions as a share of total balance sheet credit to the public increased to 1.4 percent, compared with an average of 1.25 percent in the last five years.

⁶⁶ When neutralizing the effect of the exchange rate, credit to the public grew by about 9.9 percent.

⁶⁷ In annual terms and neutralizing the effect of the exchange rate.

⁶⁸ For more information, see Box 1.5 on the subject “Development of Credit and Interest Rates during the Crisis”, *Israel's Banking System*, 2019.

3.1.3.1 Centralization of the credit portfolio

Changes in the Banking Supervision directives and in legislation and reforms carried out over the past decade have led to a significant decline in the credit provided by the banks to the large business groups and large borrowers, and to the distribution of credit among many and more diverse borrowers.

As a result, the banks have significantly reduced their exposure to large borrowers in the past decade, particularly to large and leveraged groups of borrowers. The 100 largest borrowers' share of the total credit portfolio was, as of the end of 2019, about 9 percent, compared with a rate of about 15.4 percent in 2009.

3.1.3.2 Credit granted by the banking system during the Corona crisis⁶⁹

During the first months of the crisis (March to June), credit grew at an unprecedented rate of about NIS 19.7 billion (5.7 percent in annual terms), but the change in credit was not uniform among the various segments. Most of the increase in credit (NIS 22.7 billion) was for housing (an increase of about 9.2 percent in annual terms) and to commercial and business borrowers (about 8.3 percent). Some of the commercial credit was provided based on the utilization of credit facilities provided to those companies before the crisis. Conversely, consumer credit declined by NIS 5.3 billion (a decline of about 10.5 percent in annual terms). Most of the decline in the amount of credit to retail customers is explained by the decline in private consumption during the restrictions on economic activity, which is reflected in a significant decline in the demand for consumer credit, mainly in credit cards (during April, credit card purchases declined by about 40 percent). In addition, there was also some impact on the supply of credit, due to the reduction in activity in the banking system (due to lockdown restrictions) and a reduction in initiated activity for the provision of credit and at sales centers. There was also a decline in credit to small businesses, mostly in March, due to the very high increase in risk, while the banks waited for the launch of the state-guaranteed small business fund, which was launched on April 1, 2020. Indeed, there was some increase during the month of April, following the launch of the fund. By the end of June⁷⁰, the amount of credit granted through the fund reached about NIS 12.8 billion, which provided a response to about 39,050 applications approved by the banks (about 56 percent of all applications processed by the banks to date).

In addition, a uniform outline has been formulated for deferring loan payments, which has been adopted by all the banks, in order to help the banks' customers deal with the challenges and consequences of the crisis. From the beginning of the crisis until mid-July, the banks deferred loan repayments for about 571,100 customers in all activity segments, totaling NIS 7.3 billion.

3.1.4 Liquidity risk

The liquidity level of Israeli banks is high and is supported by stable and decentralized retail deposits. The high liquidity level enables the banks to continue to provide credit despite the COVID-19 crisis.

The banking corporations' liquidity coverage ratio (LCR) continues to be higher than the minimum ratio requirement set by the Banking Supervision Department (100 percent), and the aggregate LCR this year was about 125 percent, slightly lower than its value last year, which was about 128 percent.

In the first quarter of 2020, with the start of the COVID-19 crisis the banking system's LCR rose sharply and its aggregate value reached about 136 percent. The source of this increase is the shift of assets from the capital market to the banks, in view of the sharp fluctuations in the capital markets resulting from the crisis. The shift led to an increase

⁶⁹ The data in this section are reported according to the management approach. The division into activity segments according to the management approach is based on the types of products and services or on the types of customers. The assignment of customers to the activity segments is based on their actual affiliation with the handling organizational unit, and the classification is made at the Bank's discretion and not according to uniform rules for all banks.

⁷⁰ The figure reported is for June 28, 2020.

of about 8 percent in the public’s deposits in the first quarter of the year, mainly in the daily deposits of nonfinancial retail and wholesale customers. These deposits were used by the banks to increase the amount of credit to the public, and especially to increase the amount of high-quality liquid assets through the purchase of government bonds, the accumulation of cash, and the increase of deposits with the Bank of Israel.

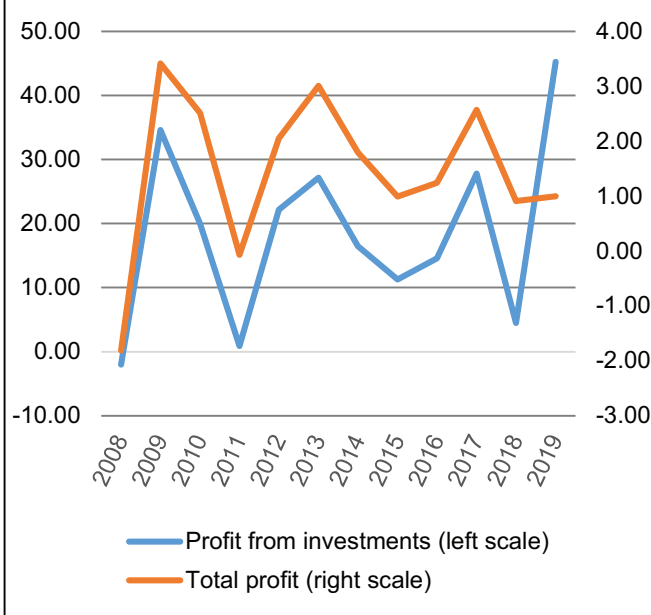
3.2 Insurance companies

The total profit of the insurance companies⁷¹ increased moderately in 2019—from about NIS 792 million in 2018 to about NIS 841 million. This is despite the fact that in 2019, the insurance companies’ profits from investments soared due to substantial increases in the markets. They recorded profits of NIS 45.2 billion from their investments⁷², compared with profits of only about NIS 4.4 billion in the corresponding period in the previous year. This is also despite the fact that the insurance companies have again charged variable management fees for profit-sharing policies marketed until 2003 (after all the companies covered the accumulated losses in these plans at the end of the previous year). The main reason for this is a substantial decline in the interest rate curve and an increase in life expectancy⁷³, which led to an increase in life insurance and health insurance reserves in parallel with a decline in total profit. Figure 28 shows the close relationship between profits from investments and the insurance companies’ total income in the years 2008–2018 and the loosening of the relationship in 2019.

Starting on December 31, 2032, the companies will be required to meet a recognized capital to required capital ratio of at least 100 percent.⁷⁴ As of the first half of 2019, all insurance companies are in compliance with the transitional provisions of the “Solvency” circular, i.e. they hold recognized capital at a rate of 65 percent of the total required capital, and most of them also meet the circular’s final targets. The aggregate solvency ratio of the insurance companies, calculated as the ratio between total capital and their required capital, without taking into account the transitional provisions, was 101 percent in the first half of 2019—below the rate recorded at the end of 2018 (113 percent).⁷⁵

The close connection between the insurance companies' profits from investments and total profits weakened in 2019.

Figure 28
Total Profit and Profit from Investments, 2018–2019 (NIS billion, annual terms)



⁷¹ The five largest insurance companies: Migdal, Clal, Harel, Menorah and Phoenix.

⁷² This profit is the highest recorded from investments by insurance companies in the last decade.

⁷³ In June 2019, the Capital Market Authority issued an update of the mortality tables, which affected the companies’ executive insurance portfolios.

⁷⁴ A draft circular was recently published, according to which insurance companies will be given the option to extend the period for full implementation of the capital reinforcement requirements from 2024 to 2032, according to the European deployment method. If approved, the solvency of insurance companies will increase significantly.

⁷⁵ The calculated ratio level could not be reported taking into account the transition provisions for 2018 because one of the companies did not report this ratio.

The impact of the COVID-19 crisis on the insurance companies

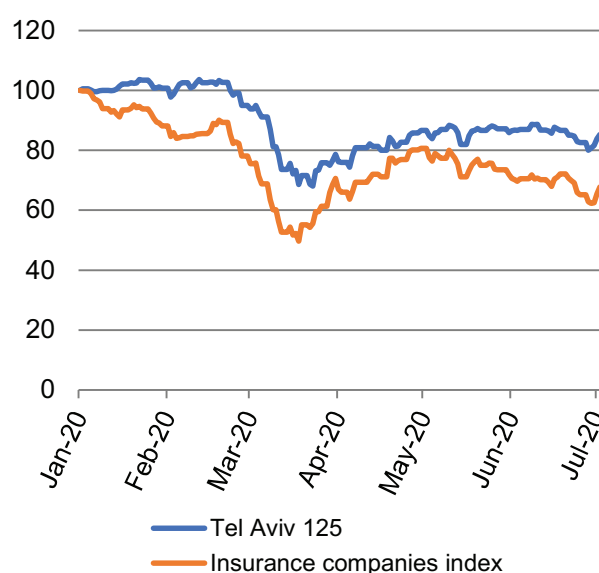
The IMF estimates⁷⁶ that the COVID-19 crisis will have both a direct impact on insurance companies—a significant increase in morbidity and mortality rates that will lead to a particularly high claims rate—and an indirect effect, through declining bond and stock prices, downgrading of the bonds they hold, which may result in an increase in capital requirements, and a decline in the interest rate environment. The IMF also notes that the more the insurance companies are affected by the current crisis, the lower their risk appetite will be⁷⁷, which will affect their supply of credit to risky borrowers.

The trend of yields of the insurance companies' bonds since the beginning of the year has been similar to the trend in bond yields in other sectors⁷⁸. Starting from March 5, the insurance companies' bond yield spreads have jumped by more than 3.5 percentage points. After about two weeks they again declined, but to a rate that is still higher than it was before the crisis. The jump in the insurance companies' bond spreads was much greater than in the banks' bond spreads. The insurance companies most affected by the crisis are the companies that deal mainly with general insurance⁷⁹, and among them, those whose ability to operate remotely is limited.⁸⁰

Due to the spread of the COVID-19, there were sharp declines in the markets between February 22 and March 22. In view of the strong effect of profits from investments on the insurance companies' profitability, profits declined sharply in the first quarter of the year. Figure 29 shows the insurance companies index compared to the Tel Aviv 125 index from the beginning of January 2020 to July 2. It should be noted that as early as November, the insurance companies' stocks began to fall relative to the Tel Aviv 125 index, which began to fall only at the end of February. This decline can also be attributed to the low interest rate and the decline in the risk-free interest rate curve, which is used to examine the adequacy of the reserves set aside by the companies. Due to the low interest rate, there has been a significant increase in insurance liabilities, which forces companies to increase their reserves, resulting in an impairment of the equity. Share prices on the insurance companies index declined by about 38 percent between February 19 and March 23 (while the Tel Aviv 125 index declined during this period by about 34 percent). Since March 24, the insurance companies' stock prices have recovered, in line with the trend in the Tel Aviv 125 index.

The trend was similar regarding the insurance companies indexed and the Tel Aviv 125.

Figure 29
The Insurance Companies Index and the Tel Aviv 125, January 1, 2020–July 2, 2020
(daily data, index: 01/01/20=100)



⁷⁶ From a series of articles on the COVID-19 crisis ("Impact of COVID-19 on Insurers", Special Series on COVID-19).

⁷⁷ Insurers severely impacted by the Global Financial Crisis in 2008 avoided taking risks (Kirti 2019).

⁷⁸ See Figure 1 in the box on Developments in the Bond Market During the Crisis, which shows the bond yield spreads by industry.

⁷⁹ Even in the 2008 crisis, the general insurance companies experienced a larger increase in spreads, and their recovery was slower.

⁸⁰ Ayalon and Hachshara are the companies that have suffered the most severe impact. Figure 9 in the box on Developments in the Bond Market During the Crisis describes the sharp rise in the bond spreads of these companies.

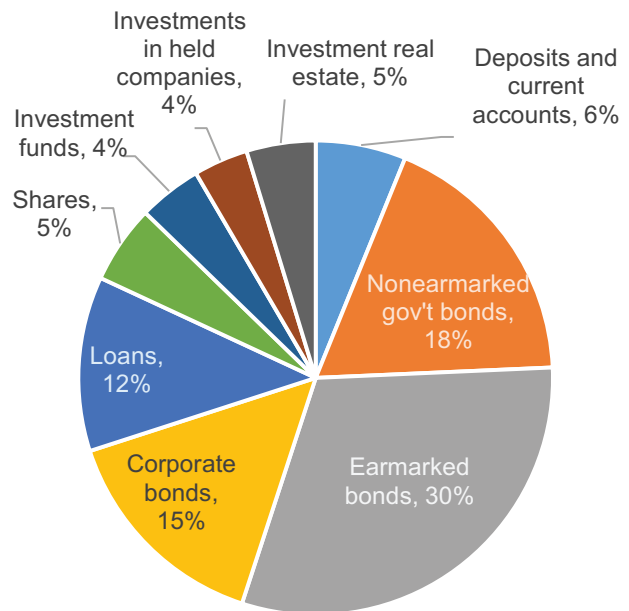
To understand the effect of the declines in the markets resulting from the COVID-19 crisis on the insurance companies' nostro, we will first describe the composition of investments in the nostro portfolio of these companies in the month before the declines (February 2020, Figure 30). About 54 percent of the insurance companies' nostro portfolio is invested in assets with relatively low risk: government bonds, deposits, and current accounts.⁸¹ In addition, insurance companies try to disperse the risks involved in their exposure to the capital market through exposure to alternative investments, such as real estate and direct loans (about 17 percent of the investments), which reduce their direct (and immediate) dependence on the capital market's results.⁸² In addition, their exposure to the hotel and tourism industry and to the trade industry—the industries most affected by the current crisis—is negligible (about one percent of total credit).

The five largest insurance companies reported a loss of about 2 percent in their tradable nostro portfolio in the first quarter of the year, and the loss has been almost completely offset by increases in capital markets since the end of March. In addition to the risk of impairment of the value of the nostro portfolio due to declines in the markets, insurance companies are also exposed to the risk of impairment of assets in “profit sharing” plans, which were sold between 1991 and 2003. Although in those policies, the investment risks are incurred by the policyholders, the realization of those risks prevents the insurance companies from collecting variable management fees on them⁸³, a significant source of profit for them. The estimated management fees that will not be charged due to the negative real return until a cumulative positive return is achieved is—according to the five largest insurance companies, as of the beginning of June—about 17 percent of the management fees they charged in all of 2019.

According to the estimates by the five companies and to the best of their knowledge to date, both in the area of general insurance and in the areas of long-term savings and health, they do not have significant direct insurance exposures to the effect of the COVID-19, including with respect to morbidity and mortality

Most of the insurance companies' nostro portfolio prior to the crisis was invested in low-risk assets.

Figure 30
Composition of Insurance Companies' Nostro Assets, February 2020



⁸¹ At the end of March, the Capital Market, Insurance and Savings Authority issued leniencies regarding the insurance companies' investments in the capital market, with the aim of removing investment barriers in the capital market and supporting it.

⁸² It is important to note that these investments also carry risks. They are generally less liquid than an investment in bonds and stocks, and unlike negotiable equity and debt instruments, they are not traded on the market and are therefore valued at fair value using the model used for the revaluation of nontradable corporate bonds.

⁸³ For the management of the assets in these policies, the insurance company is entitled to a fixed management fee of up to 0.05 percent of the cumulative assets per month, as well as to variable management fees of up to 15 percent of the real return achieved, less the fixed management fees. In the event of a loss, the insurance company is not entitled to the variable management fees, until the cumulative loss is covered.

rates⁸⁴ However, the companies have reported an increase in withdrawals by insured clients and policyholders from individual savings policies, advanced study funds, pension funds, mutual funds, and provident funds⁸⁵, but they emphasize that in general the saving public is showing restraint, and the extent of such withdrawals is not significant.

The companies add that the continued morbidity and the shutdown of large parts of the Israeli and global economy may, by their very nature, accentuate the negative consequences for the companies' activities, as described above, as well as other parameters that may be affected later, such as increased insurance claims, in particular claims of loss of work capacity, a decrease in future income from premiums and pension contributions collected from employees and the self-employed who have lost their jobs, etc.—effects the extent of which the companies cannot estimate at this stage.

The reinsurers estimate that they are also expected to suffer heavy losses as a result of the COVID-19 pandemic. It should be noted that the exposure of all of the five largest insurance companies to reinsurers rated A and above (out of all reinsurers to which they are exposed) is greater than 99 percent.

During the crisis, the Capital Market, Insurance and Savings Authority issued a number of leniencies for the benefit of the insurance companies. The most significant of these deals with the method of measurement of their liabilities—the liability adequacy test (LAT).⁸⁶ The risk-free interest rate curve serves as the basis for estimating the actuarial provisions in the financial statements of insurance companies and pension funds. This is in addition to the determination of liabilities according to fair value in calculating the capital requirement of the companies within the framework of “Solvency II”. Since the end of 2019, the risk-free interest rate curve has continued to decline, and recently, due to the outbreak of the COVID-19 virus, even more so. A decline in interest rates means higher actuarial provisions. This is especially true for long-term life insurance and long-term care insurance. If the leniencies published by the Commissioner of Insurance in the draft are approved, the effect of the interest rate will be mitigated, which may lead to a retroactive increase in the profits of the insurance companies for 2019 and to an offsetting of the expected losses from the low interest rate.

4. Risk scenarios for the financial system

In this section we present the main economic risk scenarios that we believe can adversely affect the financial system in Israel. The risk scenarios presented in the report are selected according to the probability of their realization and the damage they may cause to the Israeli economy, given its unique characteristics and its nature as a small and open economy. The selection of risk scenarios is based on: (a) a subjective assessment by the Bank for Israel's Financial Stability Division based on economic developments, fundamental economic factors, the economic background conditions in which the financial system operates, and the intensity of its vulnerability should the risks materialize; (b) forecasts of short- and medium-term developments; (c) reviews and reports of international entities such as the IMF.

⁸⁴ The above estimates in the areas of long-term savings and health are based on assumptions of a baseline scenario regarding the actual infection rate of the virus and existing information regarding morbidity and mortality rates from it. We emphasize that there is no certainty or complete reliable information regarding these assumptions.

⁸⁵ The Capital Market, Insurance and Savings Authority provides relief for savers who take out loans against their savings in order to minimize withdrawals from savings funds.

⁸⁶ According to the leniency, the insurance company is entitled to consider, in the LAT, the difference between the depreciated cost and the fair value of the assets not listed in the statement of financial position at fair value, except designated bonds. According to these directives, if an external restriction (for example, a regulatory directive) or an internal restriction (for example, an administrative restriction) applies to the distribution of assets to cover certain reserves, the assets will be allocated to certain liabilities based on those restrictions. Otherwise, the allocation will be made in accordance with the documented allocation procedure to be determined by the company, or in relation to the size of the reserve.

The Financial Stability Report for the previous half-year emphasized the following risk scenarios: 1) the housing market—a sharp and rapid decline in housing prices; 2) the financial assets market—a sharp decline in the prices of bonds and all financial assets; 3) private debt—deterioration in financial conditions; 4) the global environment—a wave of rating downgrades for companies with low investment ratings.

In the face of the COVID-19 epidemic, the most significant risk scenario is a significant wave of restrictions, another lockdown due to the epidemic, and a severe impact on real activity. Such a wave may be more challenging than the first, for several reasons: the depletion of security cushions and reserves of business and financial entities due to the sharp decline in economic activity in the first wave of restrictions; close to 15 percent of bank credit is under deferral of repayments at the request of borrowers so that in the fall, a period when the risk of the epidemic, and with it the restrictions, is higher, it will be necessary to again deal with the deferred repayments; governments will be forced to take further steps to encourage the economy, resulting in a further increase in government deficits and debt; and the expectation that central banks will take additional, and maybe even more extreme, monetary accommodation measures, which may encourage the underpricing of risks in the financial markets. The gap that has apparently opened between the real data around the world and financial asset prices has increased the risk, and the realization of the risk scenario could trigger further deterioration, which would impact the financial system through all channels of exposure. Added to this risk scenario and the high level of uncertainty is the difficulty in passing the state budget, all in the midst of the crisis.

Box 1

The Bank of Israel's steps to deal with the COVID-19 crisis¹

The COVID-19 crisis is an unprecedented shock to Israel's economy. Households, businesses, and the government require a well-functioning financial system in order to deal with the impact of the pandemic and to support a recovery process optimally and efficiently. In this *Financial Stability Report* for the first half of 2020, and in this box specifically, we identify the crisis's ramifications on financial stability and explain how the recent activities of the Bank of Israel (and other policy makers) have helped and continue to help Israel's financial system and economy overall endure this challenging period.

We first emphasize that COVID-19 is a severe threat to health, and the steps required to contain its spread have had a markedly adverse impact on economic activity. In addition, alongside the domestic handling of the pandemic's outcomes, Israel, as a small open economy, was forced to deal with the steep decline in global activity and the contraction of global demand. At a relatively early stage, uncertainty about the intensity of the adverse impact of the virus's spread caused a significant shock to the financial market dynamics, which created liquidity problems in major markets and raised considerable concerns about the continued regular supply of credit by financial institutions. The Bank of Israel's monetary steps over the course of the reviewed period worked to:

- ✓ Return markets to their full functioning;
- ✓ Ensure adequate liquidity to all financial institutions;
- ✓ Supply households and businesses with immediate access to credit.

In mid-March, several days after the pressure in financial markets began and negative sentiment increased, the Bank of Israel decided to intervene in the markets in order to ensure their proper functioning. In the assessment of the Bank of Israel's economists, a severe liquidity problem had developed in the bond and foreign exchange markets, which led to those markets not functioning fully. Therefore, after a meeting of the Monetary Committee on March 14, the Bank of Israel announced a series of steps, similar to those taken by major central banks worldwide at that time:

- On March 15th, the Monetary Committee decided to purchase government bonds in the secondary market, and to execute repo transactions with government bonds as collateral vis-à-vis financial institutions, and thus to inject liquidity into the economy and to make sure that the government bond market was functioning appropriately. At a later stage, the program was expanded, and it became possible to receive corporate bonds as collateral as well—an unprecedented step that itself increased investors' confidence in their ability to liquefy assets later on.
- On March 16th and 18th, the Bank of Israel announced that it would carry out up to \$15 billion of dollar/shekel swaps in order to provide dollar liquidity to the financial sector. This signaling of the possibility of providing immediate dollar liquidity to the economy was made possible by the foreign exchange reserves built up by the Bank of Israel in the past.

From a short-term perspective, it seems that these steps were effective, and that they succeeded in calming a large part of the panic and in restoring orderly functioning to the markets. The direct link between stock market fluctuations and mutual fund withdrawals and institutional investors' foreign exchange conversions disappeared. In the following days, institutional investors stopped buying foreign exchange, and withdrawals from mutual funds essentially ceased. The pressure in the financial markets declined markedly, and regular functioning was restored to

¹ This box is based on a speech by the Governor of the Bank of Israel at the Israel Economic Association's annual conference, held on June 14, 2020. The full speech and accompanying presentation are available on the Bank of Israel website.

the shekel/foreign exchange swap market, while in parallel the US Federal Reserve began to supply dollar liquidity to central banks worldwide, and the exchange rate returned to near its pre-crisis environment.

With the restoration of proper functioning to the financial markets, it became necessary to deal comprehensively with the credit market. In order to deal with the difficulties created in this segment of business activity, the central bank took the following steps:

- ✓ It reduced the interest rate to 0.1 percent;
- ✓ It supported the flow of credit to households and businesses;
- ✓ It strengthened the pass-through mechanism from monetary policy to the interest rate.

The negative impact on the revenues of businesses and households created an urgent need for credit for some of them—especially those that were highly leveraged or had low safety buffers—in order to bridge over the severe adverse impact on revenues, maintain the standard of living of households as much as possible, and assist businesses in meeting their commitments. During March, indicators began to point to an increase of the interest rate on credit in various sectors, and an almost total halt of nonbank credit. The crisis led to a sharp increase in risk, and bond yields did stabilize, but at significantly higher levels than the low levels seen before the crisis. The increase in yields had an impact on the cost of financing for the government, which had to finance the expected sharp increase in the deficit due to the slowing in economic activity and the broad assistance plan that it announced. In parallel, financing costs for wide parts of the business sector (corporate bond yields) and of banks increased, which had a direct impact on the costs of the banks' sources and on the price of bank credit. Therefore:

- On March 13th, two weeks before the set date for interest rate discussions, the Monetary Committee decided on a measure of unprecedented scope, and announced that the Bank of Israel will purchase NIS 50 billion of government bonds—triple (or double in market value terms) the amount of bonds that the Bank purchased during the Global Financial Crisis of 2008—09.
- Two weeks later, in view of the accumulating evidence of the continuation of the crisis and the expectation of a considerable decline in demand and income for many households, as well as the marked adverse impact on asset values, the Monetary Committee decided to reduce the interest rate to 0.1 percent. This step, marginal in terms of its scope, eased the burden for a large portion of borrowers whose loans were indexed to the Prime rate, and showed the Monetary Committee's commitment to utilizing every possible tool in order to support the economy.

In parallel with these actions, the data gathered together by the Banking Supervision Department showed that while the banks had injected credit at unprecedented scopes to the mortgages market and to large companies, the credit to small companies declined.² Therefore:

- The Monetary Committee decided to launch a special NIS 5 billion program³ to provide an incentive for the banks to extend credit to such businesses, and announced that the Bank of Israel would provide 3-year monetary loans at an interest rate of just 0.1 percent, on condition that the banks show that they have extended credit to small businesses. By the end of May, NIS 4.6 billion had been provided to such businesses within this framework.
-
- The Bank of Israel's steps had an immediate impact on government and corporate bond yields, and on banks' financing costs. In parallel, in order to support continued activity and to deal with the banks' increasingly strict credit policy, which was liable to adversely impact attempts to get through the crisis, the Bank of Israel chose a

² At this time, the government-guaranteed credit fund was just getting off the ground.

³ <https://www.boi.org.il/en/NewsAndPublications/PressReleases/Pages/6-4-2020.aspx>

proactive stance. Within the framework of its function as regulator of the banking system, the Bank adopted a range of measures to provide the banks with an incentive and to enable them to increase the supply of credit. In particular:

- In view of the concern that expected credit losses would bring the banks closer to the minimum capital adequacy ratio, the required capital adequacy ratio was reduced by one percentage point, while banks were called upon to reexamine dividend distribution plans and share buyback programs.
- An accounting infrastructure was established that makes it easier for banks to defer loan repayments for customers who want to do so. Subsequently, an outline for the deferral of loan repayments was published for all sectors of the economy. Within the framework of the outline, more than NIS 6 billion in payments have been deferred.

As a result of this range of activities, the data indicate that there wasn't a sweeping increase in the interest rate on credit in the economy, and that when the fund to provide government-guaranteed loans finally began to operate, it led to a decline in the interest rate on credit to small businesses.

In conclusion, the COVID-19 crisis is first and foremost a health crisis, which became a severe crisis in the real economy. Due to the determined efforts of the Bank of Israel and other central banks worldwide, and due to Israel's economy, and its financial system in particular, being in a good state at the onset of the crisis, the crisis did not become a financial crisis, and an even more severe impact on citizens' standard of living has been avoided. The central bank's goal in the short term was and still is to help households and businesses bridge the crisis period. The long-term goal is to maintain the stability and resilience of the system in order to supply a strong basis for recovery of employment and growth.

- In accordance with the declared goal, the Monetary Committee decided at the beginning of July on a set of additional steps, the goal of which is to continue to assist the economy in dealing with the COVID-19 crisis. This set of additional tools—mainly purchasing corporate bonds on the secondary market⁴, a renewal of the special plan to expand the supply of bank credit to small and micro businesses, and creating an infrastructure for expanding the range of assets that banks can put up as security against credit in the special plan—is intended to enhance the monetary accommodation, ensure the continued proper functioning of the financial markets and to support the pass-through mechanism to credit in the economy.

With that, in parallel with the range of tools implemented by the Bank, we reiterate that the real, as opposed to financial, nature of the crisis means that the main burden of managing the crisis must be borne by fiscal policy.

⁴ The Bank of Israel began purchasing corporate bonds in the secondary market for the first time. The goals of the program were to ensure the continued proper functioning of the corporate bond market, and to strengthen the pass-through from monetary policy to the credit market by lowering the interest rate at which companies raise credit in the capital market and by making additional funds available for credit to all industries.

Box 2

The Effect of the COVID-19 Crisis on the Household Sector

- Prior to the COVID-19 crisis, the financial state of the household sector was sound thanks to the marked and continued improvement in the labor market since the Global Financial Crisis. Despite the increase in the volume of credit in recent years, the quality of lenders' credit portfolios was good, particularly bank credit. In parallel, many households held sufficient liquid assets to safely get through the beginning of the crisis.
- The crisis dealt a severe blow to the employment and wages of many self-employed individuals and employees. This was mainly felt among the weaker population segments in the labor market: workers without academic degrees, unskilled laborers, older workers, younger workers, *Haredim* (ultra-Orthodox), and women. The adverse impact on the earning capacity of so many households could endanger their strength and pose a challenge for the financial system.
- The main financial risk is in housing credit, due to the high level of its balance. The decline in household income is expected to increase the payment-to-income (PTI) ratio and make it difficult for some mortgage borrowers to service their debt.
- The PTI ratio in about 60 percent of the mortgages issued today is lower than 30 percent, so that even if the household's income declines by 20 percent, the average rate should not exceed the maximum rate set out in the Banking Supervision Directive, a rate that indicates a high risk level.
- The difficulties for households led to the implementation of a program to freeze mortgage payments to make it easier for the households to get through the crisis. However, at the end of the program, some households are expected to have to deal with an increase in repayments or a reorganization of loan balances that would mean an extension of the lifespan of the loans.
- The industries that were hit hardest—retail sales, tourism, restaurants, and so forth—are the ones that employ workers with lower education levels and relatively low productivity levels, who may remain unemployed for longer. The longer the unemployed remain without employment, the less chance they have of regaining employment.

1. THE SITUATION PRIOR TO THE CRISIS

When the COVID-19 crisis struck, the economic state of households was good. Since the Global Financial Crisis of 2008–9, the unemployment rate among those aged 25–64 declined steadily from 8.3 percent to 3.2 percent in February 2020. Real wages per employee post increased by about 19 percent, and average net real household income increased by about 30 percent.

In 2018, the household sector held more than NIS 7 trillion in assets (Table 1). More than half of that amount is comprised of the value of real estate, and 46 percent is accounted for by the value of financial assets, including long-term savings in pension funds. A slowdown in the increase of home prices moderated the increase in the value of real estate assets held by households, while the value of financial assets was virtually unchanged compared with 2017 due to losses from securities holdings. On the other side, the volume of household credit continued to expand at a high rate, mainly due to the rapid increase in housing credit.

BANK OF ISRAEL

Table 1: Balance of Israeli Households' Assets and Liabilities, 2018
(NIS billion, current prices, month-ends)

Real assets	NIS billion	As a share of total assets	Annual rate of change	Households' liabilities and net value	NIS billion	As a share of total liabilities and equity	Annual rate of change
Real estate ^a	3,686	52%	2.5%	Mortgages	360	5%	6.8%
Vehicles	131	2%	4.8%	Consumer credit	197	3%	2.6%
Total real assets	3,817	54%	2.6%	Total liabilities	557	8%	5.3%
Financial assets	NIS billion	As a share of total assets	Annual rate of change				
Cash and deposits	627	9%	5.2%				
Securities excluding shares	183	3%	-23.6%				
Shares	478	7%	-4.6%				
Mutual funds	280	4%	16.6%				
Insurance reserves ^b	1,496	21%	1.9%				
Various receivables/payables	167	2%	5.9%				
Total financial assets	3,231	46%	0.9%	Equity^c	6,491	92%	1.5%
Total assets	7,048	(100%)	1.8%	Liabilities and equity	7,048	(100%)	1.8%

^a Real estate holdings as of mid-year.

^b Including life insurance, provident funds, and pension funds.

^c Net value: total assets minus total liabilities.

SOURCE: Based on Central Bureau of Statistics.

We do not have up-to-date data regarding the value of households' financial assets, but regarding the other balance-

Table 2: Households' real assets and liabilities, 2019

	2019	Change from 2018
Real estate	3,780	2.6%
Vehicles	141	7.5%
Total real assets	3,922	2.7%
Mortgages	386	7.2%
Consumer loans	202	2.5%
Total liabilities	588	5.6%

SOURCE: Based on Central Bureau of Statistics.

sheet items, we can show data for 2019 (Table 2).

The high employment rate, the low unemployment rate, and wage growth in recent years in view of the historically low interest rates made it possible for households to increase both housing credit and consumer credit. The quality of all indices of bank housing credit¹ was good, which was also reflected in the low number of debtors being evicted from mortgaged properties and the sale of such properties to repay debts.² According to an examination carried out by the Law Enforcement and Collection System Authority³, 707,000 files were opened between 2009 and 2018 in

¹ Including loan loss provisions, the weight of credit 90 days or more in arrears, the ratio of net write-offs to total housing credit, and so forth.

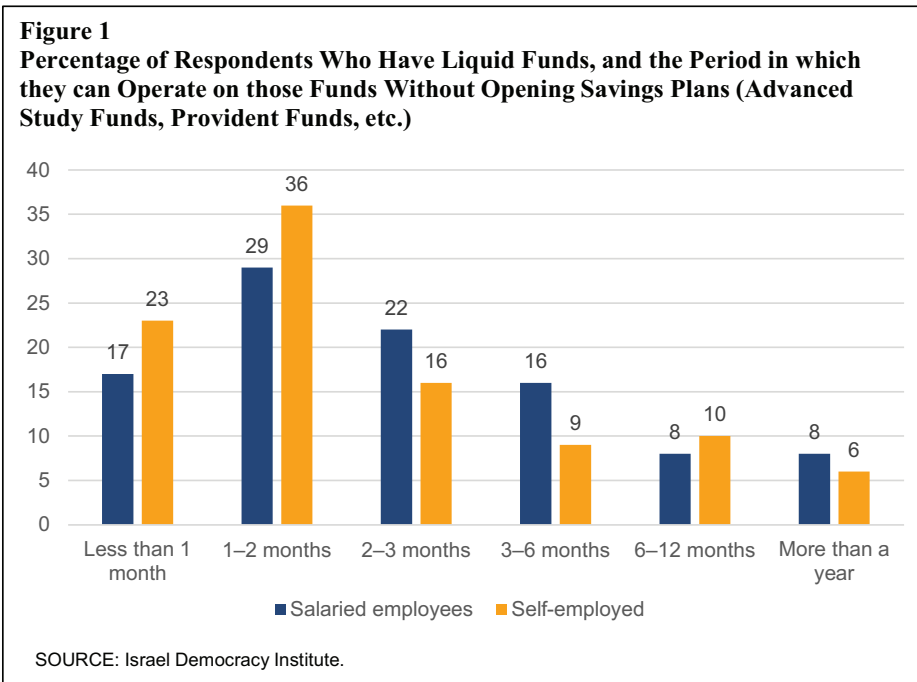
² From January 2015 to the end of March 2020, 270 families were evicted from their homes, and 374 properties were sold by the banks during bankruptcy proceedings against debtors. As of the end of March 2020, about 1,500 properties are being handled by the Official Receiver, and requests to appoint a receiver have been filed regarding 452 additional properties.

³ Yolanda Golan, "The Credit Market from the Standpoint of Debts Handled by the Collection Agency", Law Enforcement and Collection System Authority, Research, 2019.

respect of the provision of credit. Of those, 63 percent were in respect of bank credit, 19 percent were in respect of nonbank credit, and 18 percent were in respect of credit from credit card companies.⁴ In 2018 and 2019, the number of files opened by the Authority increased, even though the labor market was at full employment. The growth of nonbank credit and credit from credit card companies was accompanied by an increase in their share of enforcement and collections files, a share which is higher than their share of household debt. This shows that the quality of this debt is lower than the quality of bank debt. Files in respect of nonbank debt accounted for 23 percent of the total files that were opened in 2018, while nonbank debt accounted for about 10 percent of total nonhousing credit. Files in respect of credit card company debt accounted for 20 percent of all files opened in 2018, while that debt accounted for 12 percent of all nonhousing debt.

As the household balance sheet shows, a lot of money is held in liquid holdings—cash and deposits. According to the results of a survey by the Israel Democracy Institute that was conducted at the beginning of the lockdown⁵, only about one-quarter of respondents noted that they do not have sufficient liquid funds to support themselves without opening savings plans. This is compared with 66 percent of respondents who noted that they do have liquid funds for some length of time. The distribution of answers was similar among the self-employed and among salaried employees.⁶ However, most households that had liquid funds had enough to support themselves for just one or two months (59 percent of the self-employed and 46 percent of salaried employees, Figure 1).

In most households that had liquid funds at the start of the crisis (the survey was conducted between March 29 and April 2), the funds were sufficient for a period of just 1–2 months.



⁴ This is mainly credit to households. Most debtors in these files are individual debtors: 91 percent of debtors to banks, 99 percent of debtors to the credit card companies, and 87 percent of debtors to nonbank entities. The median amounts of debt upon opening the files for credit card companies and nonbank entities are relatively low—about NIS 7,000 and about NIS 7,300 respectively.

⁵ The survey was conducted between March 29 and April 2 of a representative sample of salaried employees and self-employed (3.8 million salaried employees and about half a million self-employed workers or microbusinesses employing up to 5 people).

⁶ Among the self-employed, 68 percent noted that they have liquid funds, and 20 percent noted that they do not. Among salaried employees, 65 percent noted that they have liquid funds and 26 percent noted that they do not.

2. THE IMMEDIATE EFFECT OF THE CRISIS

As a result of the imposition of serious restrictions on economic activity and on the number of workers who can attend their workplaces, more than one million workers were put on unpaid leave or were dismissed from their jobs starting in mid-March 2020. About half of all workers who were shut down came from just six industries: education, food and beverage services, household services, retail trade, manufacturing, and wholesale trade. These industries pay relatively low wages. Employment in industries with relatively high wages was less severely impacted, whether because they are essential, such as electricity, water, and other essential infrastructures, or because of their workers' ability to work from home (high-tech, information and communications, financial services). It should be noted that even within each industry, the wages of workers who were shut down are lower than the average wage in that industry.

The average monthly salary of workers who were shut down was just NIS 7,577 in 2017, compared with an average wage of NIS 12,136 for those who were not shut down.⁷ This difference is explained by the relatively large proportion of *Haredi* (ultra-Orthodox) workers, women, younger workers, and workers without an academic education—population groups whose wages are lower than average—among those who were shut down. For instance, 27 percent of employed *Haredim* who worked in 2017 were shut down, compared with 18 percent of non-*Haredi* Jews, while 21 percent of women were shut down compared with 16 percent of men. Among all those who were shut down, 16 percent were aged 15–24, and 30 percent were aged 25–34. Eighty-nine percent of those who were shut down, who worked in 2017, do not have an academic degree. According to Employment Service data, about 1,013,000 job seekers without an academic degree claimed unemployment benefits in April, compared with just 47,400 with an academic degree.⁸ The Ministry of Finance's analysis also showed that the rate of households where two wage-earners were shut down is greater among households with low income levels.

The first and main impact of the crisis was on household income. Between March and May, about 977,000 new job seekers registered with the Employment Service.⁹ Not only are unemployment benefits limited in time (in accordance with age), but they only partially compensate for the wage the worker earned prior to the crisis. (Unemployment benefits are calculated as a percentage of the unemployed worker's average daily wage, and that percentage declines as the pre-unemployment wage increases. In addition, the benefits are limited to a maximum amount of NIS 10,551 per month.) Self-employed individuals who were forced to close their businesses or reduce their operations are not entitled at all to unemployment benefits, but they were promised grants in a number of installments, with the amount depending on the volume of the business's lost income.¹⁰ Among the workers who remained employed during the crisis, not all of them managed to maintain their wage level, mainly due to the decline

⁷ Based on an analysis of data from the Employment Service, the National Insurance Institute, and the Tax Authority for the period from March to the first week in April, 2020, which relate to about 877,000 workers put on unpaid leave or dismissed, of which 725,000 were employed in 2017. The analysis was published on the Ministry of Finance's website, Chief Economist Section.

⁸ There is an insignificant difference between data from the Ministry of Finance's examination and data from the Employment Service, since the Ministry of Finance data focus on those who were employed in 2017, and because not all those who were shut down are eligible for unemployment benefits (and therefore do not approach the Employment Service).

⁹ The total number of workers who were shut down is higher, because it includes workers who are not eligible for unemployment benefits, including workers beyond retirement age and the self-employed.

¹⁰ According to updated Tax Authority data (July 20, 2020), about 247,000 requests for grants were approved in the first installment, about 400,000 requests were approved in the second installment, and about 251,000 requests were approved in the third installment. Grants totaling about NIS 5.2 billion were paid out.

in their scope of employment and the cancellation of overtime hours, bonuses, shifts, and so forth.¹¹ The income of most public sector workers who were put on forced vacation at the expense of accumulated vacation days was also adversely impacted, although to a lesser degree, due to the absence of overtime. According to a Central Bureau of Statistics survey of the state of businesses at the outbreak of the COVID-19 pandemic, which relates to 34 percent of all salaried employees in the economy prior to the crisis, 19.3 percent of salaried employees in the survey population suffered an adverse impact to their wages due to an initiated reduction by the employer. This rate differs between industries, ranging between 8.8 percent in the financial services and insurance services industry to 30.9 percent in the food and beverages industry and in the hi-tech industry.¹²

An adverse impact to employment and household income has an effect on households' ability to service their debt. This effect could be temporary if the economy manages to return to full activity within a relatively short time, or it could be prolonged if the economy has difficulty returning to routine, businesses go bankrupt, and the unemployment level remains high over time. A survey of civil strength during the COVID-19 crisis shows that at the end of April, half the population over age 21 was concerned about difficulties in covering their expenses, while toward the middle of May, the rate dropped slightly to 46.5 percent.¹³ The survey also showed that the economic situation of about 46 percent of the population worsened due to the COVID-19 crisis. The level of public optimism increased between the two waves of the survey. During the first wave, 27.3 percent of participants expected a worsening of their financial state in the next 12 months, while in the second wave, only 18.3 percent had the same expectation. Those expecting an improvement in their financial state increased from 20.6 percent in the first wave to 26.7 percent in the second. Concerns over the future were reflected right at the start of the crisis in the results of an Israel Democracy Institute survey. Just 63 percent of salaried employees who were not working were certain that they would return to their jobs, while 37 percent were not certain or did not know. The rate of those who were certain they would return to their jobs increased with their income levels.

The banking system provided a short-term solution for households suffering from cash flow difficulties, through loan repayment deferrals according to an outline formulated by the Banking Supervision Department. The possibility of freezing mortgage payments for a period of 6 months was offered, with no limitation on the balance of the loan amount. Repayment deferral was also offered for consumer loans for a period of 3 months for loans with an outstanding balance of less than NIS 100,000, with an option (at the bank's discretion) for a further 3-month deferral.¹⁴ A new outline was recently presented, in which customers who requested a freeze in mortgage payments could receive an additional deferral to the end of 2020, and customers who had not yet deferred payments could do so until the end of October for a period of up to half a year. Regarding consumer loans, the deferral period was extended by a further three months (with no bank discretion). According to Banking Supervision Department data, as of the end of June, mortgage payments were deferred for about 144,600 customers (about 16 percent of active mortgages), accounting for about one-quarter of mortgage balances.¹⁵ In addition, payments were deferred on about 277,600 commercial loans, accounting for 8.8 percent of the total balance of such loans.¹⁶

¹¹ In the Israel Democracy Institute survey, 48 percent of salaried employees and 90 percent of self-employed answered that they expected a decline in their income (to full loss) in March and April.

¹² According to data from the sixth wave of the survey, which was conducted in mid-June.

¹³ This rate is higher than the average among the Arab population—60.3 percent and 52.2 percent in the two survey waves—and lower than the average among those aged 65 and over—31.1 percent and 28.7 percent.

¹⁴ In any case of payment deferrals, the deferred payments will bear interest that will not exceed the original interest rate of the loan.

¹⁵ It is not necessarily the case that every household that defers payments cannot repay their loans. Some may have decided to stop payments in order to save the amounts of the monthly payments. Such a step is essentially equal to taking out a low-interest loan (the interest rate in the mortgage contract).

¹⁶ For more information on the topic, see Box 1.7 of the *Survey of Israel's Banking System* for 2019.

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The Banking Supervision Department took two additional measures with the aim of assisting the public and in order to provide a response to households' credit needs. A directive issued on March 15, 2020 enables a banking corporation to provide an all-purpose loan backed by a dwelling at an LTV rate of 70 percent (prior to the leniency, the rate was restricted to just 50 percent) subject to a declaration by the borrower that the purpose of the loan is not for the purchase of an investment property. However, it does not seem that the public took advantage of this opportunity. The volume of such loans increased from NIS 375 million in February to NIS 468 million in March, but then declined in April to just NIS 275 million (meaning that the average for March and April together was similar to the February level).

The other step was mainly intended for those who were in the process of purchasing a dwelling and signing a mortgage agreement but were placed on unpaid leave. A directive issued on April 27 enables the banking corporation in its estimation of income for calculating the payment to income ratio to take into account the borrower's average income in the three months prior to being put on unpaid leave or prior having his scope of employment reduced due to the crisis. This would hold if, in the bank's assessment, the borrower is expected to return to his job once the COVID-19 crisis is over, at the same income level he had prior to the unpaid leave, and provided that the payment-to-income ratio after the borrower was put on unpaid leave did not exceed 70 percent.

The halt in economic activity also had an impact on households' expenditure side. According to Central Bureau of Statistics National Accounts data, private consumption was severely impacted by the crisis, declining by 20.8 percent in the first quarter (annualized). There were particularly sharp declines in the consumption of durable goods and of services, and in Israelis' consumption abroad.

Data on credit card activity by industry, obtained from Shva (Automatic Bank Services), reflect both the decline in household expenditures and the extent of the impact to the activity of the various industries. According to these data, total average daily credit card expenditures declined by 30 percent during the lockdown (March 16 to April 19), compared with the period from the beginning of the year. The gradual removal of restrictions from the end of the Passover vacation to the end of April was accompanied by an increase in daily expenditure, such that the decline relative to the average pre-lockdown expenditure narrowed to 15 percent at the beginning of May. The worst impact was in the tourism, restaurants, leisure, and education industries, while there was less of an impact in expenditure on fuel, transport, electricity, clothing and furniture. An analysis by the Bank of Israel Research Department shows that the level of total credit card purchases at the end of May and beginning of June was, on average, close to the value

Table 3: Average household expenditure, selected consumption items, by income quintile, 2017-18 average (NIS)

<u>Monthly expenses:</u>	Lowest quintile	Second quintile	Third quintile	Fourth quintile	Highest quintile
Education services	701	794	987	1,044	995
Culture, sport, and entertainment	132	239	326	410	652
Vacation and trips	50	107	156	179	213
Hobbies, sports equipment, and camping	175	131	166	185	224
Public transit	114	93	76	87	81
Personal services and cosmetics	48	48	90	109	165
Monthly total	1,220	1,413	1,801	2,015	2,331
<u>Yearly expenses:</u>					
Travel abroad	2,589	4,702	7,680	12,667	21,382
Total savings	3,808	6,115	9,481	14,681	23,713

SOURCE: Based on Central Bureau of Statistics Expenditure Survey.

that would have been observed according to the trend that prevailed before the crisis. Purchases in the restaurants, education, and leisure fields were 60–70 percent of the expected value, but the tourism field has still not recovered, and the level of purchases in that field was just 30 percent of what would have been expected absent the crisis.

According to the Israel Democracy Institute survey, about 88 percent of all respondents believed that their expenditures on culture, tourism, leisure in Israel and abroad, sport, and so forth will decline in the coming period. About 28 percent assess the decline in their expenditure at less than NIS 1000; 34 percent at between NIS 1000 and NIS 2000; about 19 percent at between NIS 2000 and NIS 4000; and about 8 percent estimated that they would reduce their expenditures by more than NIS 4000. Table 3 presents the potential “savings” in expenditure in a month of lockdown according to household income quintiles, and the “savings” that may derive from foregoing travel abroad in 2020.

Households that absorbed a decline in income may reduce expenditures on the purchase of durable goods in the future as well. One of the components of the Central Bureau of Statistics Consumer Confidence Index tracks the intention to make large purchases this year relative to last year. This component declined sharply, from -9 in February to -21 in March, and declined further to -37 in April—a level not seen since the publication of this index began in March 2011. There was a slight improvement in May, when the index rose to -32, and a further improvement in June, to -28. Obviously, the extent of the impact on consumption will be affected by the pace of the economic recovery and by how fast employees who have been shut down return to work.

3. CREDIT RISKS AS A RESULT OF THE COVID-19 CRISIS

A loss of employment or a decline in wages may put the strength of households at risk and challenge the financial system. Households with large liabilities relative to income may reach the point of default. Deferral of mortgage and consumer loan payments provide households with a period to reorganize—search for new work and change the structure of their expenses in order to adjust to their reduced income levels. It should be noted that anyone deferring mortgage payments will be required to make higher payments in the future, since the amounts deferred will be spread over the remaining original lifespan of the mortgage.

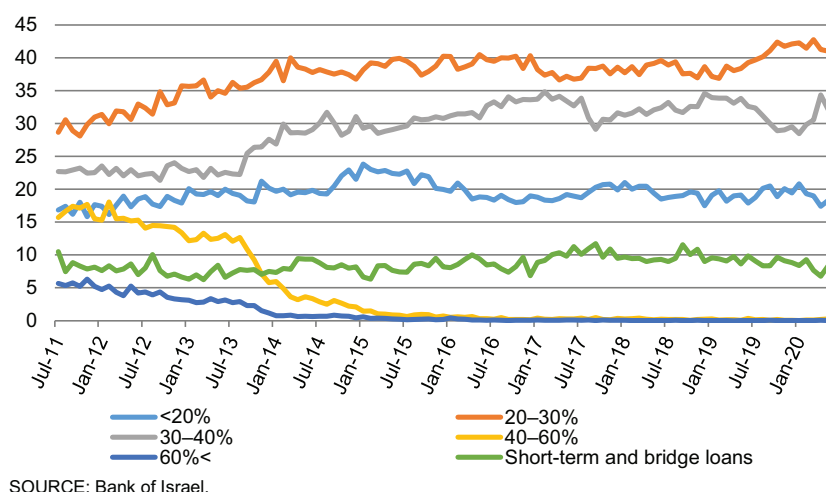
The risks in mortgages. A decline in household income may increase the monthly payment to income (PTI) ratio, which is a main variable in assessing the borrower’s likelihood of default. In August 2013, the Banking Supervision Department restricted the PTI ratio on housing loans to 50 percent, and required an additional capital allocation for mortgages with a PTI of more than 40 percent, which made them more expensive. As such, in practice, since the directive was applied, the banks rarely issue mortgages with a PTI of more than 40 percent (Figure 2).¹⁷ Close to 60 percent of mortgages currently issued have a PTI of less than 30 percent. Even if income declines by 20 percent, the average payment-to-income rate should not exceed the maximum rate set out in the Banking Supervision directive, a rate that indicates a high risk level. A greater decline in income may lead to a dangerous increase in the PTI ratio for a small portion of mortgages. As of now, the decline in the interest rate is helping mortgage borrowers in the Prime-indexed track.

The main threat to the mortgage portfolio is derived from the effect of the crisis on borrowers’ repayment abilities as a result of the increase in the likelihood of remaining unemployed. According to the Research Department’s forecast, the unemployment rate among those aged 25–64 will be 9 percent at the end of 2020 and 6 percent at the end of 2021 in the optimistic scenario, and 11 percent at the end of 2020 and 9 percent at the end of 2021 in the

¹⁷ During the period that preceded the directive, a considerable share of mortgages had a PTI ratio higher than 40 percent (Figure 2). However, it is also possible that the income of those households that took mortgages with a higher PTI has increased since then. In addition, their debt balance has declined after years of payments, such that if their mortgage payments are high relative to income, they will apparently be able to refinance their mortgages in order to lower their monthly payments if necessary. Moreover, in the period prior to the restriction, the Prime-indexed track was very popular (until May 2011). These mortgage borrowers benefited from a persistent decline in the interest rate, such that in any case, the monthly payments on such mortgages declined markedly, together with the PTI ratio.

A decline in household income may increase the PTI ratio, which is a main variable in assessing a borrower's likelihood of default.

Figure 2
Distribution of All New Mortgages Issued in the Month by PTI Ratio, July 2011 to May 2020 (percent)



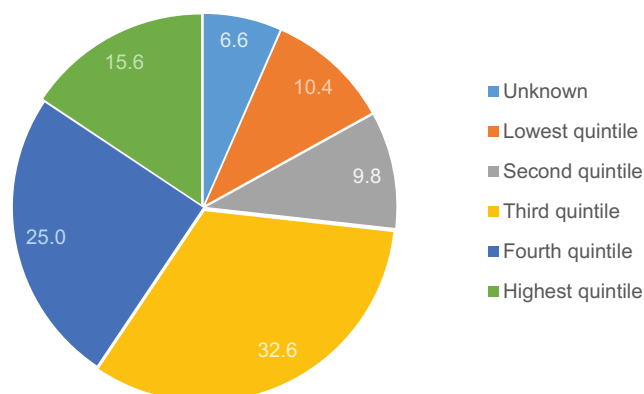
pessimistic scenario—quite far from the situation that prevailed prior to the crisis. The Central Bureau of Statistics does not include workers that were placed on unpaid leave in their official definition of the unemployment rate, but classified them as temporarily absent from their jobs. Labor Force Survey data show that the rate of employed people (salaried employees and self-employed) who are temporarily absent from work for all or part of the week for reasons linked to the COVID-19 virus was 26 percent of all employed people in March, 39 percent in April, and 24.5 percent in May. There was a high rate of absentees due to the pandemic among older workers—those aged 60 and over (an age group that apparently has a very low rate of mortgage payers). Among those aged 25–29, the rate of absentees for reasons connected with the pandemic was also more than a quarter of all employed people.

The Employment Service publishes monthly unemployment data at the locality level (excluding small localities), which are the registered unemployment rates based on the number of job seekers (and not on self-definition, as done in the Labor Force Surveys). According to these data, the unemployment rates increased in all localities, but there are marked differences between them. The following analysis examines the exposure of the banking system’s mortgage portfolio to localities with high unemployment rates as recorded in April 2020. All of the localities for which there are unemployment data were divided into quintiles in accordance with the distribution of the unemployment rate. The share of the mortgage portfolio in each quintile of localities is calculated from data on the total mortgages issued between 2015 and 2018, and the data relate to the original level of the principal (and not to the outstanding mortgage balance). The calculation used data on all mortgages, including those issued for the purchase of investment properties, because those who actually live in such properties are residents of the locality, and the income of the landlords depends on the financial state of the tenants. (A survey by Tel Aviv University found that one in eight tenants did not manage to pay full rent in April.) Figure 3 shows that 40.6 percent of total housing credit issued between 2015 and 2018 was issued for the purchase of dwellings in localities in the two highest quintiles of the unemployment distribution, and that just 20.2 percent of the mortgages financed the purchase of properties in localities in the bottom two quintiles of the distribution.¹⁸

¹⁸ The group in which the unemployment rate is “unknown” was created because there are no unemployment data for some of the smallest localities.

Forty percent of mortgages issued between 2015 and 2018 were used to purchase properties in localities within the two highest quintiles of unemployment distribution, while just 20 percent were used to purchase assets in the two lowest two quintiles.

Figure 3
Distribution of the Mortgage Portfolio Issued between 2015 and 2018 by Unemployment Quintile of the Locality, Entire Banking System (percent)



SOURCE: Bank of Israel.

However, the characteristics of those dismissed and those put on unpaid leave can show that some of them are not supposed to be paying a mortgage—younger and older people. The average wage of laid off employees is below the median wage of salaried employees, and the rate of those making mortgage payments in the lowest income deciles is relatively low (Figure 4). According to data published by the Ministry of Finance, close to a quarter of households that purchase a first home between the beginning of 2015 and April 2020 (inclusive) have at least one spouse laid off due to the COVID-19 crisis. Based on the number of first-time home purchases only during that period, we can estimate the number of households that have at least one laid off person (in other words, those that are having difficulties paying their mortgage) at 49,000–55,000. The official data on the number of those returning to work are still low. According to the Employment Service, just 206,500 job seekers among those registered in May reported that they have returned to work. However, the actual figure should be higher, since there is no reporting obligation, and it is possible that the number of those returning to work will increase more in June. The encouraging figure is that

Table 4: Mortgage payers as a share of households, by income decile, 2018 (percent)

1	2	3	4	5	6	7	8	9	10
9.4	18.1	22.8	25.9	34.5	31.9	39.8	38.3	37.6	33.5

SOURCE: Based on Central Bureau of Statistics Expenditure Survey.

those between 20 and 54, the group in which the prevalence of mortgage borrowers is high, account for 84 percent of those reporting that they have returned to work thus far. However, their rate of return to work remains low—just 18.6 percent. (The overall average is even lower—17.7 percent.)

Risks in consumer credit. An adverse impact to households' income may increase the volume of consumer credit that is not repaid, and the chances of failing to repay consumer debt is higher than it is for housing debt, since it is debt that is not backed by collateral. Until the end of June, payments were deferred in about 277,600 consumer loans in the banking system alone. There are no data on deferred payments for loans provided by other financial

entities. Easing the process of declaring bankruptcy pursuant to the Payment Default and Economic Rehabilitation Law, 5778–2018 may increase the likelihood of not repaying consumer loans. However, according to the results of an analysis by the Law Enforcement and Collection System Authority¹⁹, just 8 percent of those who obtained an exemption after they got into a situation of default reached that point because of unemployment or loss of income. Even among those who were candidates for receiving an exemption, just 7 percent reported that they had accrued debt because of unemployment.

4. THE LONG-TERM EFFECT OF THE CRISIS

Following the lockdown and the first wave of restrictions, the Israeli economy is now on the path of returning to routine, which depends on the intensity of the restrictions, which in turn is affected by the recent increase in the number of infected people. The current crisis is unique, in that the Israeli economy has gone through many wars and military operations, but has never reached such a widespread shutdown of economic activity for such a long period. The return to routine is gradual, both because not all industries resumed activity and because in those that did resume activity, they are not rushing to bring back all workers (partly due to “Purple Badge” requirements). For instance, the various retail chains have returned only 50–90 percent of workers employed prior to the crisis, even though all chains have reopened. It is reasonable to assume that as a result of the losses during the lockdown, many employers see a need for streamlining.

There may also be a change in the patterns of household consumption. First, a decline in income and the need to service debt may force the public to lower consumption.²⁰ (See also Box 4.1 of the Bank of Israel *Annual Report* for 2015.) The higher the share of a household’s income that is used to service debt, the more significant the cut that it will need to make in its current expenses will be. Lowering expenses on private consumption will increase the negative impact to GDP, and may deepen and extend the recession. The main impact will be in industries that are considered luxuries—restaurants, entertainment, culture, leisure—which are industries that in any case were impacted most seriously because their shutdown was the longest. Second, an increase in risk levels in the economy will make credit more expensive, and will apparently reduce consumer credit. Third, purchasing patterns themselves may change, as the percentage of remote purchases will increase, due to the tendency toward social distancing, due to convenience, and perhaps even out of habit due to the increase in such purchases during the lockdown (see Box 6 in this report). The transition to Internet purchasing, which began long before the COVID-19 crisis but may accelerate as a result of it, will lower the need for frontal sales staff. (In contrast, the need for workers in web design and maintenance, packers and delivery workers, couriers, and so forth may increase.) The transition to working from home may also have an indirect impact on consumption due to a decline in the demand for public transit services and ready-to-eat food, and because someone who does not leave home does not go into stores on the way home, and apparently consumes less in total.

The state of the economy and the unemployment level also depend on the length and depth of the global recession. Between March and May 2020, there was a real decline of 15 percent in Israeli goods exports compared with the previous three months, similar to the decline in the volume of world trade. The Israeli tourism industry may suffer

¹⁹ R. Aharoni and R. Golan, “Exemption Recipients at the Collections Agency”, Law Enforcement and Collection System Authority, Activity Report for 2019.

²⁰ Most of the public does have financial liabilities. According to the results of the Israel Democracy Institute Survey, just 9 percent of the self-employed and 18 percent of salaried employees reported that they have no debts to repay each month beyond living expenses and current payments.

from a decline in the number of visitors in Israel even once the restrictions on flights are lifted. The hi-tech industry is also not immune to negative impacts because it depends to an especially great extent on investments, most of which are from foreign entities and investors.^{21,22}

The current crisis is different in nature than the Global Financial Crisis of 2008–9. In the previous crisis, the Israeli economy was impacted indirectly, due to the decline in exports—mainly from the hi-tech industry—to countries that were in crisis. The industries that were impacted at that time employ educated and skilled workers who do not remain unemployed for long periods.²³ Employment in the domestic services was impacted only as a secondary effect. During the COVID-19 crisis, the industries that absorbed the most serious impacts—retail trade, tourism, restaurants, and so forth—are those that employ workers with lower levels of education and relatively low productivity, who may remain unemployed for longer periods. The longer people remain unemployed, the lower their chances of returning to employment. Therefore, in order to return those hurt by the crisis to employment, widespread investments in professional training is necessary in order to provide them with the skills demanded in the current labor market.

²¹ These investments are particularly important to startup companies, which raise capital in a number of rounds. A survey conducted by the Innovation Authority in May shows that 20 percent of the 414 small high-tech companies (up to 50 people) surveyed may close within 3 months if they don't manage to raise capital. Investors stopped the fundraising process in 40 percent of the companies, and the fundraising process slowed in a further 51 percent. Fourteen percent of the companies reported the dismissal of more than 15 percent of their employees, more than one-third of the companies put employees on unpaid leave, and one-third of companies lowered wages.

²² For more information, see Box 4.1 of the Bank of Israel *Annual Report* for 2014, as well as “The Financing Characteristics of High-Tech Companies in Israel”, press release, Bank of Israel, June 30, 2020.

²³ For a discussion on the matter, see Chapter 5 of the Bank of Israel *Annual Report* for 2013.

BOX 3

DEVELOPMENTS IN THE CORPORATE BOND MARKET DURING THE CRISIS

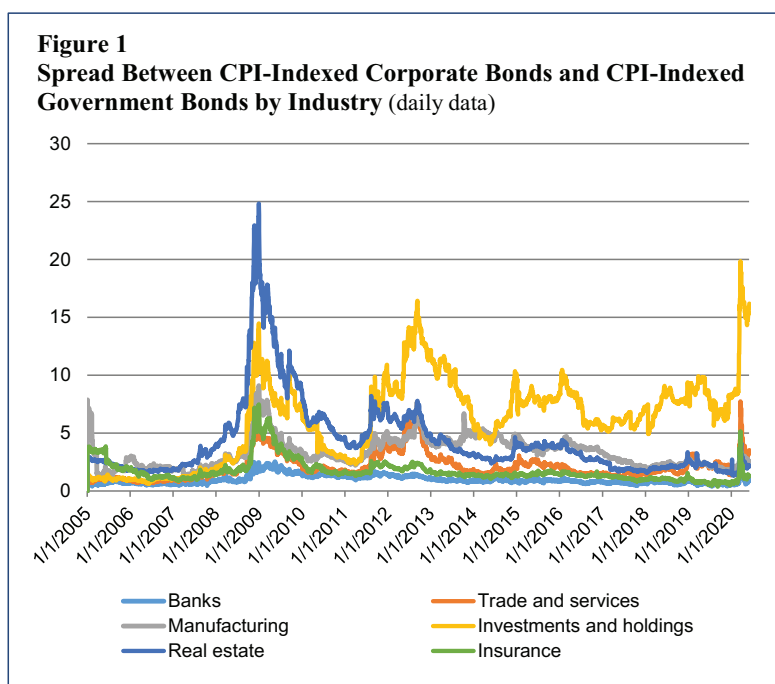
- Starting at the end of February 2020, the corporate bond market suffered from sharp price declines due to the COVID-19 crisis, and was influenced by the policy response to the crisis. At the peak of the crisis, bond prices reflected a pessimistic assessment that about one-quarter of all companies would not be able to pay off their debts in accordance with the terms of the bond.
- Mutual funds, which prior to the crisis had held about one-third of the corporate bond market, experienced high net withdrawals during the crisis, which forced them to sell bonds, thereby injecting a high level of supply to the market. This was one of the factors in the decline of bond prices. In contrast, long-term savings institutions increased their holdings, but not to a sufficient extent to offset the supply from the mutual funds. Aside from this, many companies announced bond buyback programs at high amounts, thereby sending a positive signal to the market. However, their total actual buybacks up to the end of May 2020 were of relatively low amounts.
- In the first weeks of the crisis, the increase in bond spreads in Israel was sharper than in other countries. The recovery of spreads on highly rated bonds, and the closure of the gap in spreads relative to the US, began immediately after a number of significant measures taken by the Bank of Israel to ease the pressure in the financial markets and the launch of the first government assistance program. Some of the policy measures later on also helped to close the yield gap relative to other countries.
- Between March and May 2020, the two local ratings agencies lowered their ratings on 23 companies (about 12 percent of the rated companies prior to the crisis), although most remained at “investment grade” according to the local ratings scale. In other countries, the relative number of companies that had their ratings lowered during the same period was higher.
- Corporate bond prices began to recover on March 18, but even after the period reviewed in this box, the bonds of many companies were traded at high yields to maturity, which is expected to make it difficult for the companies to recycle their debt. As of July 5, yields on the bonds of about 23 percent of companies, accounting for about 13 percent of the par value of bonds on the Tel Aviv Stock Exchange were still double-digit.
- On July 6, the Bank of Israel announced that it would purchase corporate bonds in the secondary market totaling NIS 15 billion. The aims of the program are to ensure the continued proper functioning of the corporate bond market and to strengthen the pass-through from monetary policy to the credit market by lowering the interest rate at which companies raise credit in the capital market and by freeing up additional sources of credit for all industries. On that day and the next, the Tel-Bond 60 index increased by 2.6 percent, and the general corporate bond index increased by 2.5 percent. In the days following the announcement, corporate bond issuances in the primary market also increased, particularly those by nonfinancial companies.

1. THE CORPORATE BOND MARKET PRIOR TO THE CRISIS

In Israel, contrary to most advanced economies, corporate bonds are traded mostly through the stock exchange. The corporate bond market developed only at the start of the 2000s, but since then it has grown rapidly in view of the decline in government debt (as a share of GDP), the “Bachar Reform”, and the diversion of pension savings to the capital market. Thus, between 2004 and 2019, the corporate bond market grew sixfold. By way of comparison, business credit from the banks increased during the same period by about 1.7 times.

The corporate bond market was heavily impacted by the 2008 crisis. During that crisis, the spread between corporate and government bond yields with similar indexation types and durations increased to a high level (Figure 1), partly due to massive withdrawals from the provident funds, which were main players in that market. However, as early as 2009, the bond market recovered, and its growth has continued, despite a significant number of debt restructurings in that year and those that followed.¹

At the end of 2019, 255 companies had a total of 684 tradable bond series (including convertibles, and excluding commercial paper), with a total par value of NIS 404 billion and a total market value of NIS 375 billion. At the end of the year, corporate bonds constituted 25.34 percent of total outstanding credit to the business sector. In terms of liquidity, the bid-ask spread in the Israeli market is not high, enabling transactions to be made at a reasonable cost. A contemporary study shows that the spread in the Israeli bond market is even lower than in the American market (Abudy and Wohl, *Review of Finance*, 2017).² However, the total average daily trading volume in 2019 was about NIS 771 million, an amount that is not high relative to outstanding bonds in the market. As such, there is concern that the market is not deep enough to absorb large supply or demand in a short period without affecting prices.³



¹ In view of the European Debt Crisis in 2011, there were many debt restructuring processes in Israel in 2011 and 2012. (See for instance Chen, Gaviious and Steinberg, *Review of Accounting Studies*, 2019).

² Kaz and Weinstein (2018) argue that algorithmic trading contributes to the low bid-ask spread in Israel. However, they may reduce their activity, and therefore liquidity in the market, precisely at times of increased volatility, when liquidity is necessary.

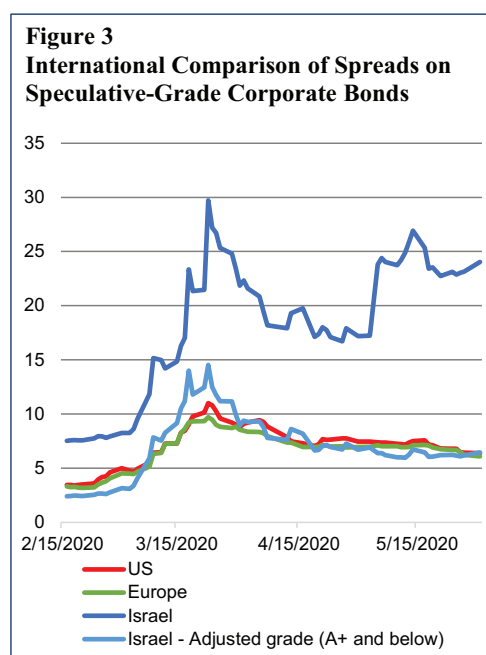
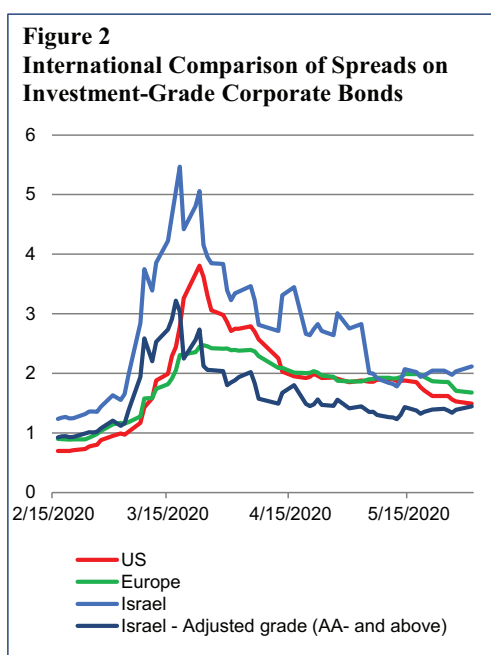
³ The Bank of Israel has previously warned that an increase in the share of passive investment in the corporate bond market and an increase in algorithmic trading as a share of this market may contribute to a worsening of declines in corporate bond prices in the case of a negative shock (Bank of Israel, *Financial Stability Report*, second half of 2018).

Starting at the end of February 2020, the corporate bond market suffered sharp declines due to the COVID-19 crisis and the repercussions of the sharp policy response to the crisis. These declines were reflected in the opening of a yield spread between corporate bonds and similar government bonds. At their peak, the spreads in most industries reached levels that were similar to those observed as the peak of the European Debt Crisis of 2011, but not the levels observed during the Global Financial Crisis of 2008–9 (Figure 1). On March 18, 2020, the corporate bond market began to recover, but as of the end of May 2020, bond prices have still not returned to their pre-crisis level.

2. INTERNATIONAL COMPARISON

The COVID-19 crisis is not an isolated incident, but rather a global crisis—a pandemic that has hit most countries and led many of them, including Israel, to impose harsh restrictions in order to slow the spread of the disease, at the cost of significant economic damage. As a direct result of the pandemic and the restrictions intended to halt it, growth in most advanced economies, including Israel, is expected to decline sharply in 2020. In view of the economic impact, corporate bond prices in various countries declined, and their spreads relative to similar government bonds increased.

While yield spreads increased in both Israel and abroad, the increases in Israel were sharper during the first weeks of the crisis than in other countries, reflected a more serious impact to the domestic bond market than to its parallels abroad. Beginning in mid-March, and even before their peers abroad, investment grade bonds⁴ in Israel⁵ began recovering, and still during March, investment-grade spreads in Israel (after conversion to the international rating scale) declined to below the investment-grade corporate bond spread levels in Europe and the US (Figure 2). The recovery of low-grade bonds in Israel was slower, with the gap in spreads (after conversion to the international rating



⁴ It is common to define a BBB- or higher rating as “investment grade”, and lower ratings as “speculative”, “high yield”, or “junk” bonds. This distinction is important from the point of view of many investors, and also reflects various regulations. For instance, in Israel, a mutual fund that chooses to invest in bonds that are not investment grade, at a rate higher than its maximum rate for equities, must add an exclamation mark to its name to emphasize the increased risk involved in this holding (Mugerman, Steinberg, and Wiener, working paper).

⁵ Maalot and Midroog, the two bond rating agencies that are active in Israel are owned by leading international ratings agencies—Maalot by Standard and Poor’s (100%), and Midroog by Moody’s (51%)—but they use a domestic rating scale. For purposes of international comparison, we present the yield spreads both by domestic rating and after converting to the international rating scale. For instance, a BBB- rating on the international scale is the equivalent to a long-term AA- rating on the domestic scale, according to Maalot’s conversion scale. Most of the companies in Israel would receive a “speculative” rating on the international rating scale. In contrast, the lion’s share of the corporate bond market value in Israel is investment grade according to the domestic scale.

scale) between them and their equivalents abroad closing only at the beginning of April (Figure 3).

3. THE EFFECT OF GOVERNMENT POLICY, THE BANK OF ISRAEL, AND FINANCIAL REGULATORS ON SPREADS

The development of the yield spreads in Israel relative to abroad can at least partially be explained by the policy measures adopted in order to deal with the economic crisis. In order to examine this, we looked at the yield gap between Israel (after conversion to the international rating scale) and the US, separately for each rating group, around the main policy measures adopted by the government, the Bank of Israel, and the financial regulators through March and April, when there was a significant gap between Israel and the US (Figure 4).

The Figure shows that the recovery in spreads on high-grade bonds, and closing the yield gap between them and their equivalents in the US began immediately after a number of significant measures adopted by the Bank of Israel to ease the pressure in the financial markets, and the launch of the initial government assistance program totaling NIS 10 billion (Measures 1–3 in Figure 4).⁶ It is worth noting that at that time, other countries also began taking significant measures to deal with the crisis, but those had not yet managed, at that stage, to calm the markets.⁷ It seems that the Bank of Israel's massive intervention to stabilize the financial markets contributed to stabilizing the corporate bond market and contributed to the recovery of global markets in view of the significant policy actions taken by other countries, led by the US and Europe. The rapid recovery of investment-grade bonds, even relative to their equivalents in the US, in contrast with the continued pressure on low-grade bonds, is apparently explained by the Bank of Israel's measures in the government bond and foreign exchange markets, which eased the liquidity problem in the market, while the estimated risk remained high despite government measures.⁸ The easing of the liquidity distress, and particularly in the government bond market, may have enabled entities requiring liquidity, such as mutual funds, who were suffering from withdrawal pressure, to sell government bonds of a sufficient quantity without have an exaggerated effect on price, as an alternative to selling high-rated corporate bonds. Similarly, easing the foreign exchange liquidity distress made it easier for institutional investors and mutual funds to deal with the demand for collateral against their foreign exchange investments. Possibly for this reason, they had less need to sell relatively liquid shekel assets such as high-rated corporate bonds, in order to purchase foreign exchange and provide collateral.

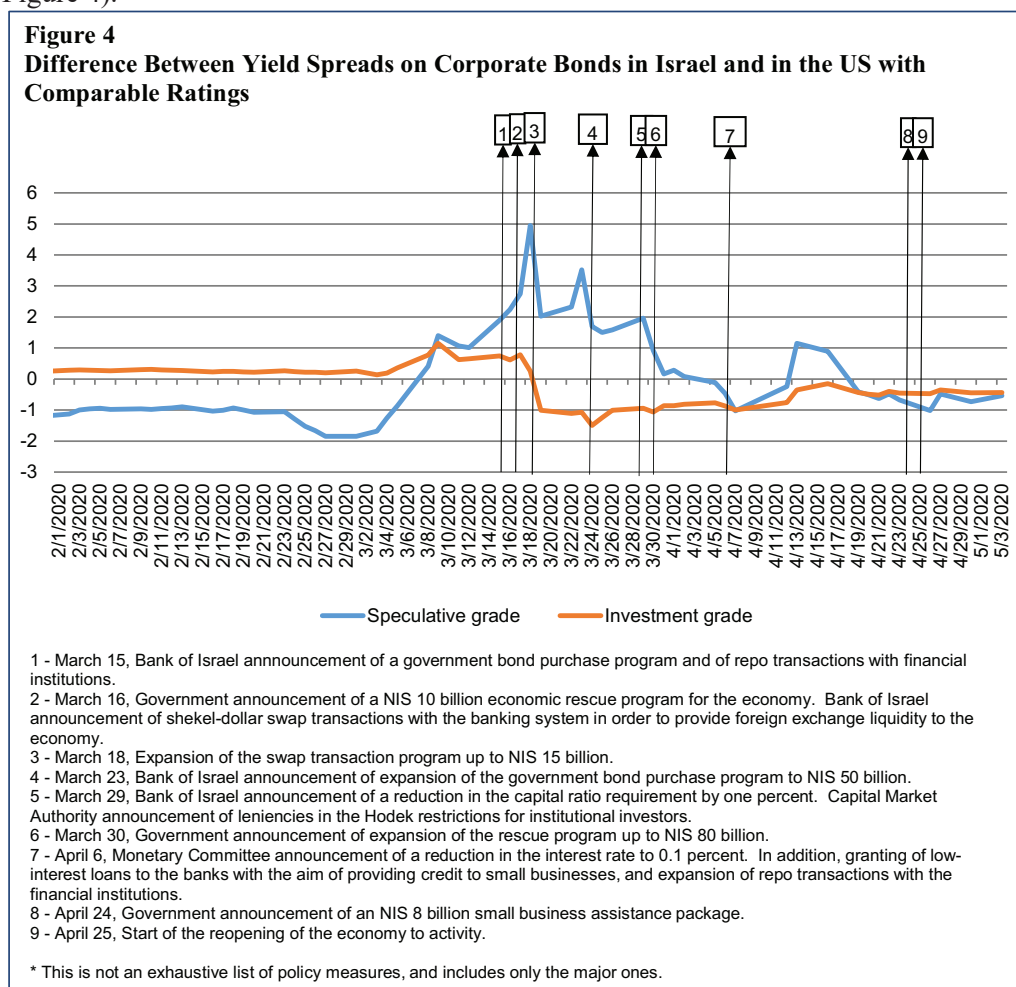
Toward the end of March, it seems that the Capital Market Authority's regulatory leniencies on institutional investors' investments in corporate bonds, alongside the publication of a comprehensive government assistance program totaling NIS 80 billion (Measures 5 and 6 in Figure 4), supported the continued narrowing of the gap in

⁶ On March 15, 2020, the Bank of Israel began purchasing government bonds in the secondary market and making repo transactions using government bonds as collateral with the financial institutions. This was in order to ensure the proper functioning of the government bond market, and moderate volatility and increase liquidity in the markets. On March 16, 2020, the Bank of Israel began engaging in dollar/shekel swap transactions with repayment in one week vis-à-vis domestic banks, in order to provide dollar liquidity to the domestic banks. This was due to pressure for dollar liquidity, which had an adverse impact on the proper functioning of many markets around the world, and in particular had an adverse impact on the domestic market. On March 18, 2020, the Bank of Israel broadened the use of dollar/shekel swaps and allocated up to \$15 billion for swap transactions, for ranges of more than one week, with a commitment to continue using this tool as long as dollar liquidity pressures continued. This objective was to ensure liquidity to the domestic financial market. On March 16, 2020, the government announced an assistance program that included advancing payments to suppliers, deferring tax payments, establishing a loan fund for small businesses, an unpaid leave arrangement for employees as an alternative to dismissals, and easing eligibility for unemployment benefits.

⁷ On March 18, 2020, the ECB announced an emergency bond purchasing program totaling 750 billion euros (The Temporary Pandemic Emergency Purchase Programme), which succeeded in halting the increase in corporate bond spreads on the continent, but did not reverse the trend. In the US, corporate bond spreads began to decline on March 23, 2020, after the Federal Reserve greatly expanded its support of the markets, including the corporate bond market. In the days that followed, there was bipartisan approval in the US for a huge assistance package totaling about \$2 trillion, which supported the recovery of the markets.

⁸ In fact, the program announced on March 16, 2020 was perceived as being insufficient. On March 30, 2020, it was expanded to NIS 80 billion, and on May 8, 2020, it was expanded again, this time to NIS 100 billion.

spreads between low-grade Israeli bonds and their equivalents in the US. This gap was completely closed after the Bank of Israel Monetary Committee decided on April 6, 2020 to lower the interest rate by 0.15 percent points, to implement the new monetary policy tool of issuing credit to the banks that would be directed toward the provision of credit to small businesses, and to receive corporate bonds as part of repo transactions with the financial institutions (Measure 7 in Figure 4).



4. THE DEVELOPMENT OF SPREADS BY RATING AND INDUSTRY

Alongside the broad increase in spreads in the market, one can discern variance between various ratings, industries, and even companies in the same industry.

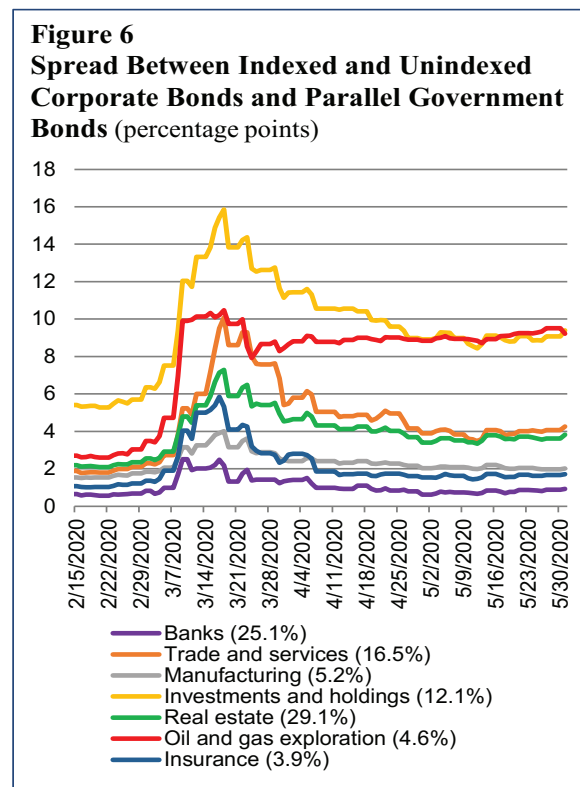
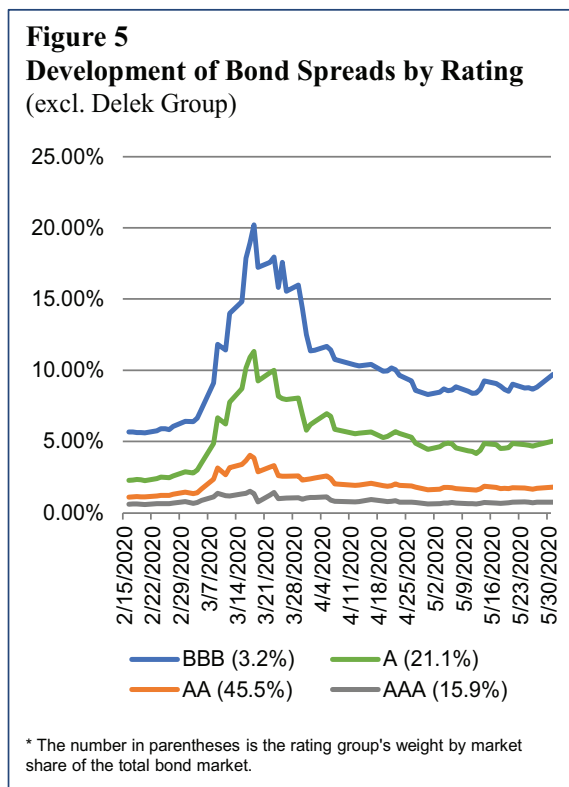
4.1 Ratings

From the standpoint of ratings (according to the domestic ratings scale), it is easy to see that the spreads widened more significantly in the two lowest rating groups—A and BBB—and that at the peak of the crisis, the average yield spread of bonds in the BBB group reached about 20 percentage points, while the average yield spread of bonds in the

A group also reached double digits⁹, which is not expected to enable a recycling of debt (Figure 5).¹⁰

4.2 Industries

There is significant variance between the various industries, which markedly reflects the more serious impact of the crisis on certain industries (Figure 6). Particularly wide spreads developed in the investments and holdings industry, where the average spreads reached a level higher than the peak that was recorded in 2008. However, the relative balance of bonds in this industry today is significantly lower than it was in 2008, and the high yield is due to a number of leveraged companies with low ratings that encountered significant difficulties. The yield spread on bonds of oil and gas exploration companies also increased sharply during the crisis, and remained high. This was mainly due to the decline in global energy prices during the crisis. The bonds of trade and services companies were also significantly impacted, with the spread between them and similar government bonds reaching a higher level than in 2008, partly because of the restrictions that seriously impacted some of these companies.¹¹ In contrast, the increase in yields in the real estate industry was more moderate than during the 2008 crisis, when the average yield climbed to 25 percentage points. However, this industry also features wide variance between companies, mainly those with different activity profiles (commercial real estate, development, and foreign companies). The companies in the manufacturing industry have throughout the crisis been considered relatively stable, and their bonds were impacted the least by the crisis. Financial firms were also hit, mainly due to concern over an adverse impact to the value of their assets (loans, and capital and debt investments) due to the impact to firms in the market.



⁹ The weighted average according to the bonds' market value.

¹⁰ The Figure does not include the Delek Group, since this company had an A rating at the start of the crisis, which gradually deteriorated to its current CCC rating. In parallel, its bonds reached a three-digit yield. Due to its significant bond debt, its inclusion in the Figure would lead to a distortion of the spreads (a significant increase in the A group, and following the lowering of the company's rating, a decline in the A group and a sharp jump in the BBB group).

¹¹ In particular, leasing companies, on whose bonds the yields jumped during the crisis.

4.3 *Financial firms*

A more individual examination of financial firms shows that while the insurance companies (Figure 7) recovered relatively rapidly following a decline in the market's concern over their stability, the yield spreads on the bonds of some noninstitutional credit providers remained high, reflecting concern about their stability (Figure 8). At this stage, it is difficult to assess whether these concerns will play out, but there is a significant increase in credit losses in some of the companies that have already published their first quarter financial statements. It is likely that only the next statements will reflect the full impact of the crisis on the noninstitutional credit providers. It is important to remember that these are firms that grew rapidly in recent years, for many this is their first crisis as significant credit providers, and for all of them this is the first crisis in which they have tradable bonds reflecting the risk level assessed by market players.¹² On the other side of the scale are the banks, where the yield spreads on their bonds increased sharply at the start of the crisis, but declined rapidly thereafter (Figures 9 and 10). The decline in yields of the banks was supported by the recovery in the markets due to Bank of Israel measures that supported liquidity in the markets, and due to government measures to assist the economy.

Moreover, on March 29, 2020, the Banking Supervision Department announced a temporary reduction in the capital requirements of Israeli banks. As expected, bank shares responded positively to the announcement. However, more surprisingly, the banks' debt instruments, which may be adversely impacted by a possible increase in their risk due to reduced capital requirements, also responded positively to the announcement. Following the announcement, there were price increases in the banks' bonds, and even in their COCO bonds—instruments the value of which may decline or even be written off due to a decline in regulatory capital to below a certain level.¹³ The positive response of all bank securities to the reduction in capital requirements should show that the Banking Supervision Department's announcement motivated market players to re-evaluate the risk of Israeli banks. The announcement was perceived as new and positive information regarding the banks' stability during a period of great uncertainty. The effect of the positive information from the regulator more than offset any concern on the part of creditors regarding an increase in the banks' leverage as a result of the new leniency.¹⁴

¹² Debt issuances by the noninstitutional credit companies in recent years were supported by the rapid growth of nonbank credit, and by legislative changes that enabled them for the first time to issue debt. In recent years, some of the companies issued not only bonds, but also commercial paper. Thus, the company with the largest market share among noninstitutional credit providers that are traded on the stock exchange—Nawi Brothers—had only commercial paper prior to the crisis (some of which it was forced to redeem at the start of the crisis) and not bonds.

¹³ For COCOs issued by the Israeli banks, Tier 1 capital at a level of 5 percent.

¹⁴ An alternative explanation is that, in the market's assessment, the Bank of Israel's announcement increased the likelihood that it would support the banks when necessary. However, the increase in the prices of the banks' debt instruments, and even in their share prices, following the announcement of the reduced capital requirements is consistent with this explanation only if the market's assessment was that if necessary, the Bank of Israel would indemnify not only depositors but also the holders of bonds, COCOs, and even shares of the banks. This alternative explanation therefore requires very strong assumptions regarding the Bank of Israel's commitment to assist parties at interest in the banks.

Figure 7
Bond Spreads - Insurance Companies

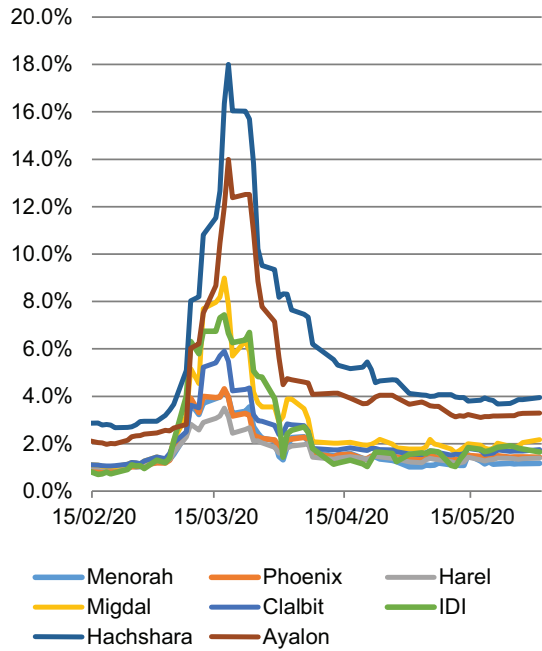


Figure 8
Bond Spreads - Nonbank Credit Companies

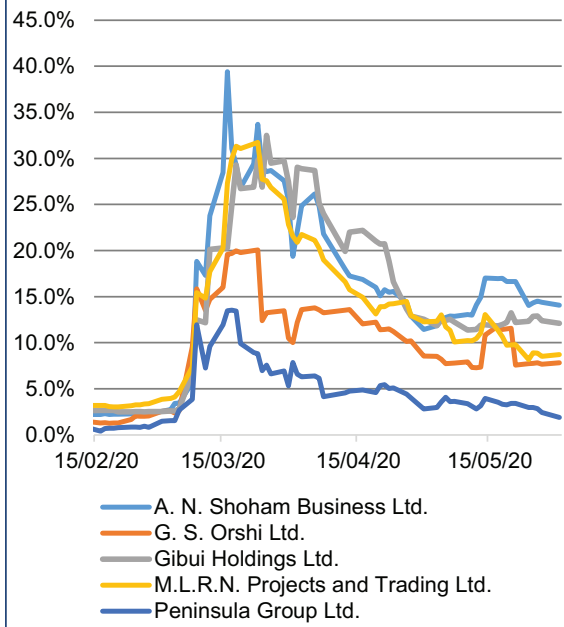


Figure 9
Bond Spreads - Banks - Regular Corporate Bonds

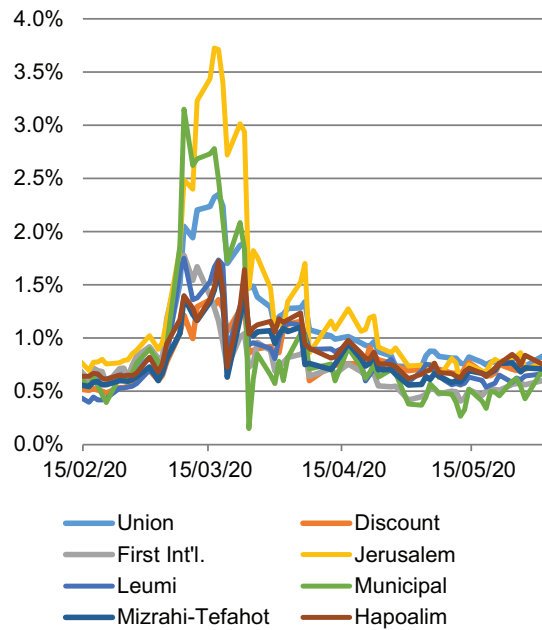
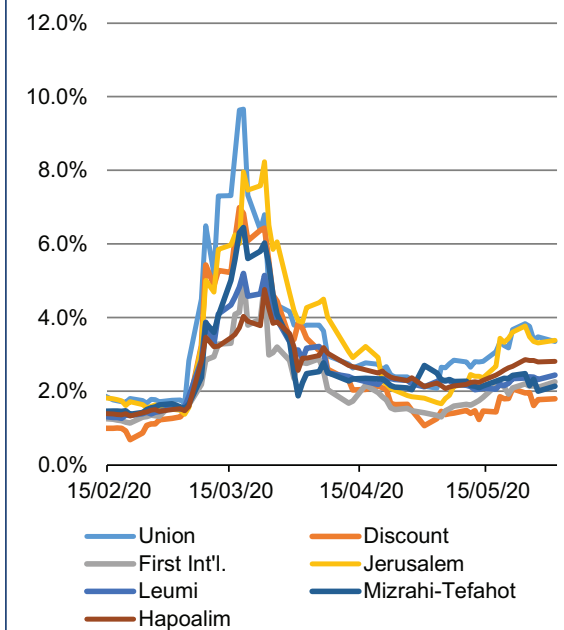


Figure 10
Bond Spreads - Banks - Contingent Convertible (COCO) Bonds

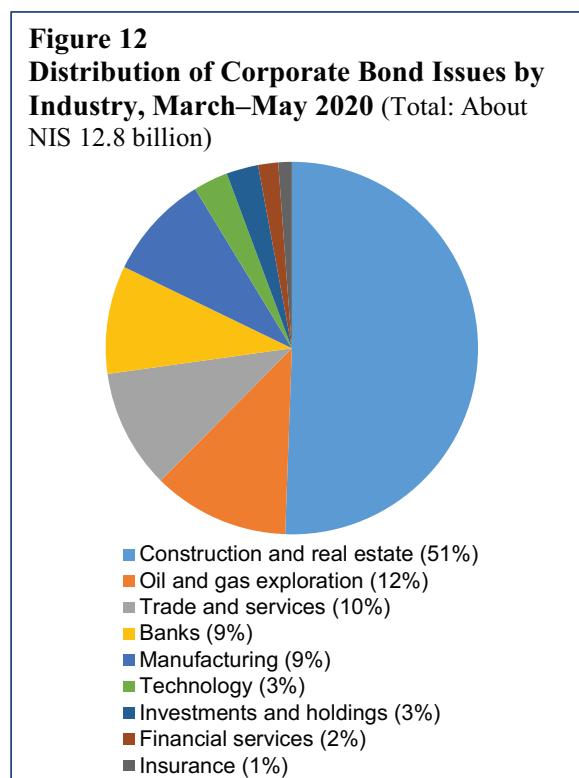
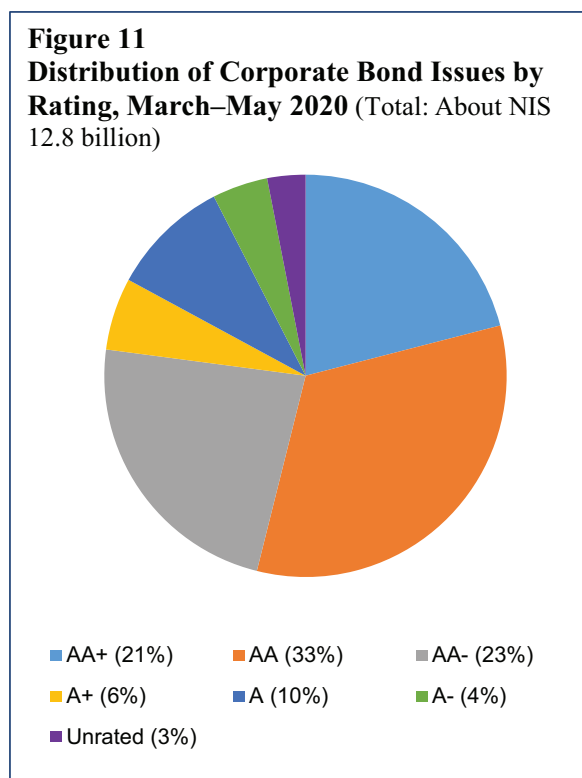


5. BOND ISSUANCES DURING THE CRISIS

In March 2020, bonds (tradable and nontradable) totaling just NIS 1 billion were issued on the Tel Aviv Stock Exchange, by five companies, mostly in the initial days of the month. The primary bond market recovered in April and May, with debt issues totaling NIS 6 billion in April and NIS 5.7 billion in May. These amounts were similar to the average monthly issuance in recent years. All of the issues between March and May 2020 were made by companies that already had bonds trading on the Tel Aviv Stock Exchange, and we can assume that the main purpose of the issues was to recycle existing debt. The issues in those months were on the same scale as total bond repayments during that period. The repayment dates of bonds totaling about NIS 13.5 billion (including interest and linkage payments) occurred in those months.

From an industry standpoint, real estate companies were particularly prominent, as they issued about 50 percent of the total capital issued during the crisis (Figure 11), while they accounted for 38 percent of the bond market prior to the crisis. The vast majority of real estate companies that issued bonds between March and May 2020 are companies specializing in commercial real estate in Israel, an industry where the crisis's impact on bonds was relatively moderate. At the end of May, the median yield to redemption of commercial real estate company bonds was about 1.7 percent, compared with 2.6 percent in the economy as a whole.¹⁵

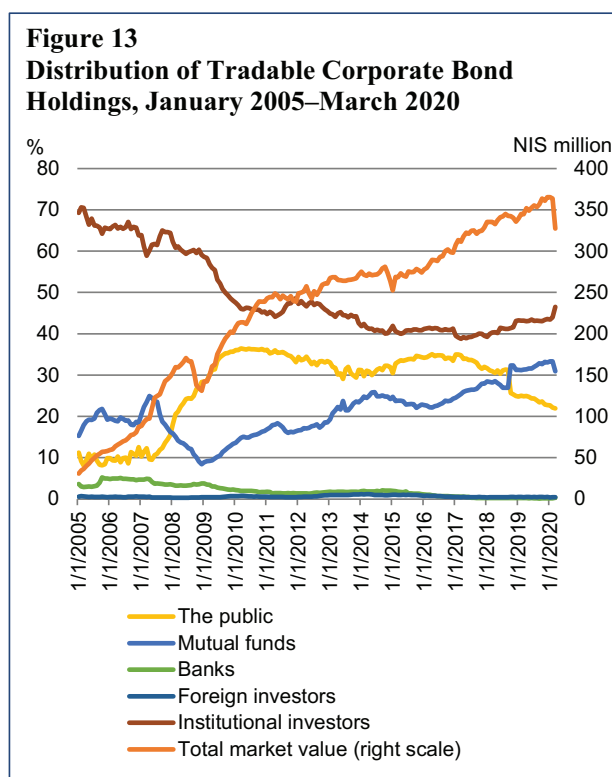
The absolute majority of companies that issued bonds during the crisis were rated A- or above (Figure 12). Alongside the focus on high ratings, the yields to maturity of bonds issued are highly heterogeneous, ranging from 1–5 percent, other than 3 non-rated bonds that were traded at a yield of above 6 percent. The largest issue during the crisis was made by the Azrieli company, which was very highly rated (AA+ on the local scale) and managed to raise NIS 1.6 billion with a yield to maturity of less than 2 percent.



¹⁵ More than 3 percent if we exclude the banks and insurance companies.

6. MAIN PLAYERS IN THE CORPORATE BOND MARKET AND THEIR ACTIVITY DURING THE CRISIS

The main bondholders in the Israeli market are the public, institutional investors, and mutual funds. Mutual funds currently have a more significant influence on this market than they did during the 2008–9 crisis, due to the increase in their relatively holdings in this market in recent years (Figure 13). Since the 2008–9 crisis, institutional investors reduced their share of the corporate bond market, partly in view of the impact they suffered during the crisis; the many debt restructuring processes that followed, which sometimes let not only to a financial impact on investors but also to the presentation of the institutional investors in a negative light; and the recommendations of the Hodek Committee, which led to the imposition of restrictions on their investments in tradable bonds. Mutual funds took the place of the institutional investors, and their share of the corporate bond market peaked prior to the COVID-19 crisis. The mutual funds are not subject to the Hodek Committee directives. The Bank of Israel has in the past announced that in case of a crisis, the public may reduce its mutual fund holdings, thereby leading to a worsening of a negative shock in the corporate bond market. (See the Bank of Israel's *Financial Stability Report* for the second half of 2018.)



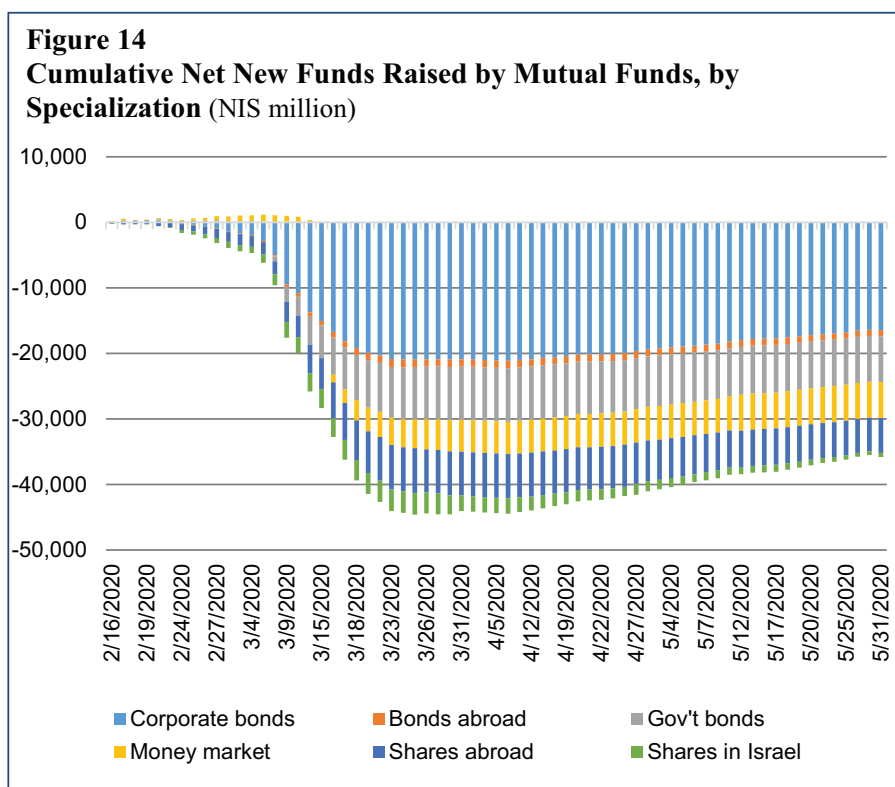
6.1 Institutional investors and mutual funds

During the 2008–9 crisis, withdrawals from provident funds contributed to price declines in corporate bonds, and vice-versa.¹⁶ In contrast, during the current crisis, withdrawals from medium- and long-term savings were very moderate, and there was no significant transition from tracks focusing on risk assets to more solid investment tracks, which, in contrast to withdrawals from pension savings, does not involve the loss of the tax benefits accrued to such savings. This may be due to the maturation of the market, which at the time of the 2008 crisis had just begun developing following the Bachar reform that removed the provident funds from the banks' management. In addition, perhaps the high yields in pension savings channels in previous years made it easier for savers to absorb the declines in 2020. Moreover, while during the 2008–9 crisis, the concern of an adverse impact to the savings of older savers just prior to their retirement motivated the government to offer those savers a safety net, the pension savings of today's older savers tends to be more solid, thereby lowering their sensitivity to developments in the market. This is due to the implementation of age-adjusted tracks in the various pension savings channels ("the Chilean model") and the differential age-based allocation of earmarked bonds in the pension funds.

In contrast with the moderate withdrawals from long-term savings instruments, bond sales during the current crisis were led by massive withdrawals from the mutual funds, particularly those specializing in corporate bonds (Figure 14). Total net withdrawals from the mutual funds reached about NIS 45 billion at the peak of the crisis. In

¹⁶ See the Bank of Israel Annual Report for 2008, as well as Steinberg and Porat (Bank of Israel Review, 2013).

April, withdrawals were already moderating, and positive net new investment was even recorded at low amounts. A number of articles from recent years showed that withdrawals in the mutual fund market may worsen developments in the corporate bond market (for instance: Feroli, Kashyap, Schoenholtz, and Shin (2014); and Goldstein, Jiang, and Ng (2017)). Goldstein et al. (2017) also showed evidence of the existence of a “run on the fund” phenomenon in corporate bond funds, which worsens crises in the corporate bond market. An examination of net withdrawals from corporate bond funds in Israel at the peak of the crisis shows that, as per the expectations of these articles, the less-liquid funds absorbed sharper price declines. One hypothesis is that these funds were forced to sell bonds at clearance prices, thereby pressuring bond prices beyond the price adjustment resulting from the change in investors’ expectations.



The massive withdrawals from the mutual funds forced them, as stated, to sell corporate bonds. In contrast, institutional investors suffered much less from withdrawals, and their flexibility in asset allocation is generally greater than that of the mutual funds, which are many times committed to a relatively rigid asset allocation. We can therefore expect that these entities would act in the opposite direction to the mutual funds—purchasing corporate bonds in order to take advantage of the opportunities created by the mutual funds’ pressure to sell.

In order to examine the actions taken by the institutional investors and the mutual funds, we use initial data from their monthly statements of holdings of various types of assets. Based on these statements, we estimated the active change in their corporate bond holdings—the quantitative change—beyond the effect of price changes.¹⁷ The examination showed that in January and February 2020, net corporate bond purchases by the institutional

¹⁷ The data available at this stage are in terms of market value to the end of each month. In order to adjust for the effect of price changes, we used the simplifying assumption that the change in corporate bond prices each month is equal to the average change of the Tel Bond 60 and Tel Bond unindexed indices. Another simplifying assumption is that this change affects only the inventory. In other words, we adjusted for the price change before estimating the change in holdings, thereby basically ignoring the price effect on net new investments in that month.

investors (provident funds, advanced training funds, insurance companies, and pension funds¹⁸) and the mutual funds were close to zero, and no type of investor among these was prominent with abnormal net purchases or sales. In contrast, it is easy to discern that in March, the mutual funds, suffering from very high withdrawals, dramatically reduced their holdings of corporate bonds. According to our estimate, they sold about NIS 11 billion worth of corporate bonds in March—about 3 percent of the total market value of corporate bonds, and close to the average monthly turnover in this market. Against these massive sales, it seems that the institutional investors, mainly the insurance companies—which have the benefit of long-duration liabilities and are therefore not exposed to liquidity risks, and which have long investment horizons—increased their corporate bond holdings. However, this increase, which was more significant than in previous months, was far from offsetting the significant sales made by the mutual funds (Figure 15).¹⁹

6.2 The issuing companies²⁰

As we have seen, massive deposits forced the mutual funds to sell significant amounts of bonds, and the purchases by institutional investors were not sufficient to offset that. The investors that were able to identify opportunities and purchase bonds at lower prices that reflected a high yield to redemption relative to the risk inherent in them include the companies that issued those bonds. The companies should have preferential information regarding their state, or at least a better understanding of information that is public. Therefore, a company’s announcement of a program to purchase its own bonds or its actual purchase of them is a positive signal to other investors as well.

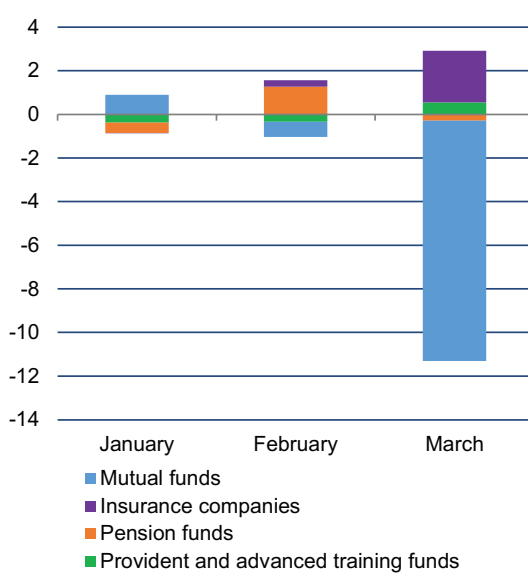
Between March and May 2020, 54 companies announced bond buyback programs (including convertibles and commercial paper), totaling up to NIS 3.61 billion. Among the industries in which such announcements were made, the most prominent were real estate companies, while financial firms announced fewer debt buyback programs relative to their share to total tradable debt (Figure 16). Most of the buyback programs were announced in the second half of March, in parallel with the worst of the drop in the financial markets. It seems that most of them began only around mid-March, because during the period prior to the publication of the annual financial statements, which, according to securities regulations in Israel, are supposed to be published by the end of March, the buyback of securities could be considered as using internal information. In view of the crisis, the Israel Securities Authority allowed companies to delay the publication of annual financial statements to the end of April 2020, while also allowing them to make buybacks of their securities subject to the prior publication of their main financial data.

¹⁸ For convenience of presentation, we added the data on provident funds and advanced training funds, the data on guaranteed yield and profit-sharing insurance policies, and the data on the various pension funds. In general, the subtypes included in each of these three groups showed similar behavior in the examined months.

¹⁹ A soon-to-be-published review by the Israel Securities Authority shows that in addition to the institutional investors, midsized to large private investors (by their historical trading volumes) increased their corporate bond holdings in March 2020.

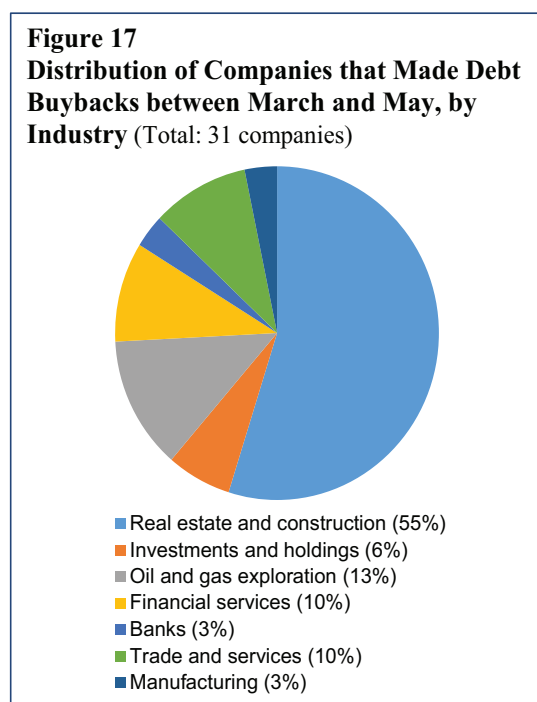
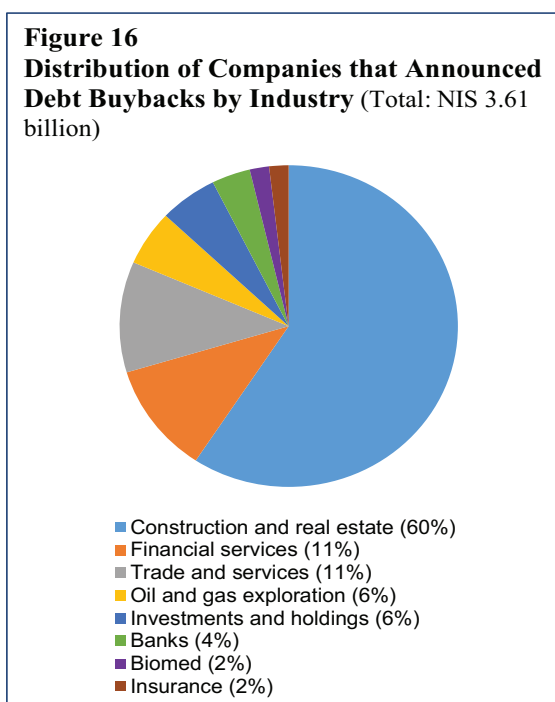
²⁰ On this issue, see also a review published by the Tel Aviv Stock Exchange on bond purchases during the COVID-19 crisis: <https://blog.tase.co.il/%d7%a8%d7%9b%d7%99%d7%a9%d7%aa-%d7%90%d7%92%d7%97-%d7%91%d7%96%d7%9e%d7%9f-%d7%9e%d7%a9%d7%91%d7%a8-%d7%94%d7%a7%d7%95%d7%a8%d7%95%d7%a0%d7%94/> (in Hebrew).

Figure 15
Estimated Purchases/Sales of Corporate Bonds by Institutional Investors and Mutual Funds (NIS billion)



As the data show, a considerable number of companies utilized this leniency in order to publish financial data and execute buyback programs based on them. From the beginning of April, the number of approvals for bond buyback programs declined, and from April 7 until the end of May, only two such programs were approved. The decline in the number of bond buyback programs from the start of April can be explained to some extent by the exhaustion of companies both able to and interested in implementing such a program, but it seems that is also due to the price increases in the market, which lessened the need for positive signaling on the part of the companies and/or the worthwhileness they attributed to purchasing their own securities in the market.

A bond buyback program is not binding, and the company can purchase less than the maximum amount announced as part of the program's approval, or even not to implement it at all. Studies from abroad found significant gaps between share buyback programs and actual buybacks (Stephens and Weisbach (1998)). Moreover, companies in Israel can also make ad-hoc purchases of bonds without a pre-announced purchase program. An examination of actual bond buybacks since the beginning of the crisis shows that 31 companies made buybacks totaling about NIS 255 million. This is not a negligible amount, but it accounts for only about 7 percent of the totals in bond buyback programs that were announced during the period. By way of comparison, between September and December 2008, companies on the Tel Aviv Stock Exchange executed buybacks totaling more than NIS 2 billion. The industry distribution of the actual bond buybacks is quite similar to the distribution of corporate bond buyback programs, but it includes buybacks by manufacturing companies as well, and does not include purchases by biomed companies (Figure 17).



What significance is there to the buybacks? In a state of asymmetrical information between the company and investors, buybacks can serve the company to reliably transmit positive information to investors regarding the state of the company (Ofer and Thakor (1987); Oded (2005)). Various empirical studies have shown a very positive market response to the announcement of a company's share buyback program (for instance: Ikenberry, Lakonishok, and Vermaelen (1995); Peyer and Vermaelen (2009)) and to actual buybacks (Ben-Rephael, Oded, and Wohl (2014));

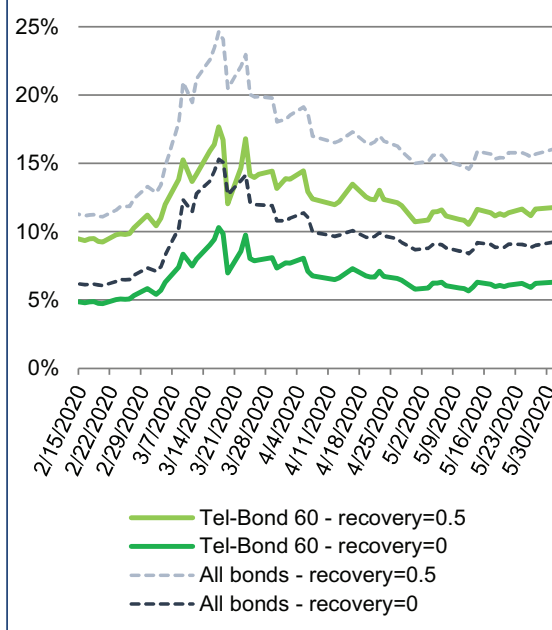
Dittman and Field (2015)). The literature regarding bond buybacks is relatively small due to limited data, but a contemporary study by Levy and Shalev (2017) found initial evidence of a positive market response to buybacks of corporate bonds as well. These studies support the possibility that companies will announce a buyback program in order to signal the market about their quality. Various findings show that companies do actually use such buybacks following drops in their share prices and when the share is undervalued (Peyer and Vermaelen (2009); Manconi, Peyer and Vermaelen (2019)), a situation that is expected during crisis periods such as the current one. Similarly, it seems that bond buybacks are also more common during periods of crisis, when expected volatility increases (Levy and Shalev (2017)), also such as the current period. As of now, it seems that the companies timed their buyback programs well, so that on average, they expect to generate a positive yield for investors that reacted positively to the signal in the announcement of the buyback program.

7. THE RISKS IN THE CORPORATE BOND MARKET

7.1 The derived probability of company defaults

The decline in bond prices during the crisis reflects investors' concerns that some companies may not manage to meet their debt payments to bond holders. Subject to certain assumptions, corporate bond prices relative to the prices of similar government bonds can be used to derive how likely various players in the capital market think a company default might be (Formula 1). For this purpose let us assume that investors are indifferent to risk, meaning they do not demand compensation in the form of excess yield in order to hold a more risky asset, and that prices do not include compensation for the lower liquidity of corporate bonds relative to government bonds or differences in transaction costs.²¹ Another important question that must be taken into account is what repayment bondholders can expect in the case of default (loss given default). Based on a study conducted in Israel (Brodesky (2017)), we assume a 50% repayment to bondholders in the event of a default, but we also present the results under a more stringent assumption of zero repayment in such a case. Subject to these assumptions, prices of all corporate bonds at the peak of the crisis reflected a pessimistic assumption that about one-quarter of all companies and about one-sixth of companies with bonds traded on the Tel Bond 60 would not be able to repay their debts in accordance with the bond terms and would default (Figure 18). This is a high rate among all companies, and higher than during normal times, but still lower than the rate of companies that would be expected to default on the basis of the pricing of their bonds at the peak of the Global Financial Crisis of 2008–9.

Figure 18
Probability of Default, as Derived from Corporate Bond Yields

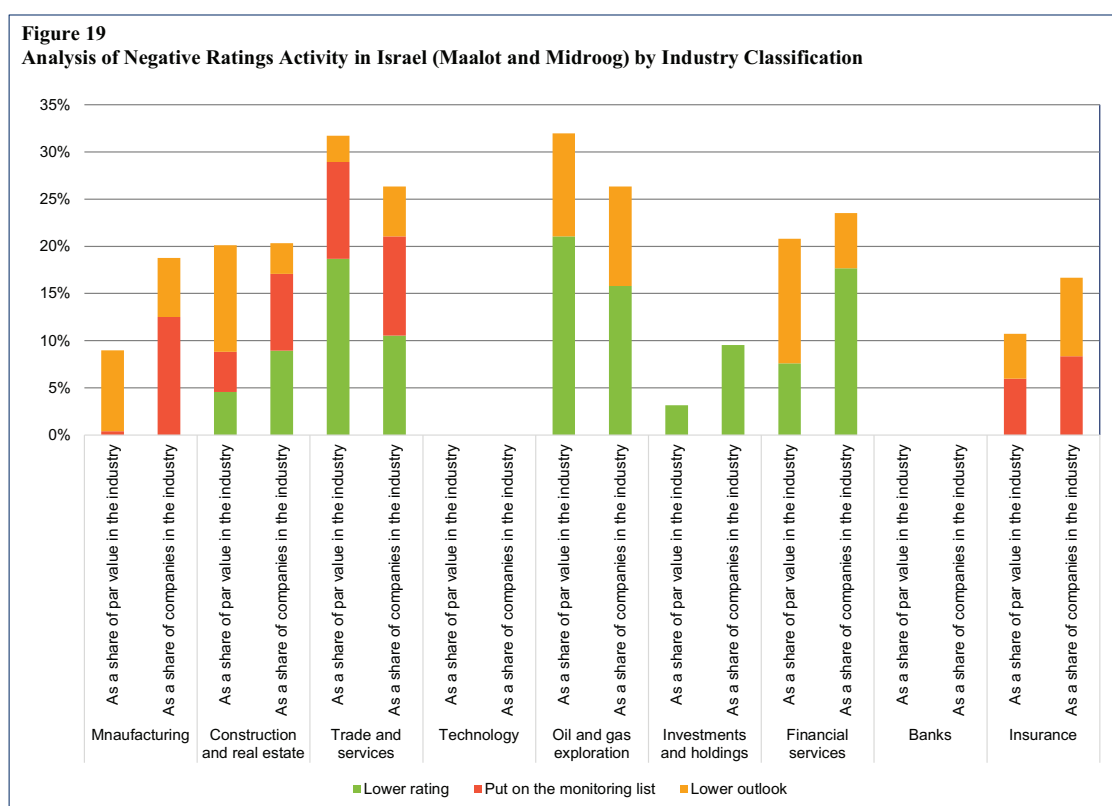


²¹ These are obviously not completely realistic assumptions, certainly during a crisis, uncertainty, and declining liquidity in the markets, but they are common simplifying assumptions that enable us to gain some insight into market assessments.

7.2 Ratings developments during the crisis

Between March and May 2020, the two ratings agencies operating in Israel—S&P Maalot and Midroog²²—carried out ratings activity that affected 116 companies with bond debt totaling about NIS 247 billion. Relatively little ratings activity was carried out at the beginning of March, apparently due to the time required for the ratings agencies to internalize the effect of the crisis on the rated companies, and because companies began resuming debt issuances that required them to obtain a rating or confirmation of an existing rating only during that period (see the discussion above).

Between March and May, the ratings of 23 companies were downgraded—accounting for about 12 percent of the rated companies prior to the crisis.²³ Twenty of the companies had their ratings downgraded by Maalot, and 13 of those were accompanied by a lowering of the ratings forecast or by a negative creditwatch outlook. Midroog downgraded the ratings of 5 companies, 3 of which also included a negative creditwatch outlook. In 20 of the 23 instances, the ratings were downgraded very moderately, such that even under the new rating they have maintained their investment grade status according to the domestic scale. The exceptions are Starward West, which had already announced that it could not repay its debts, and which was suddenly downgraded to CCC; Medley Capital Corporation; and Delek Group, whose rating by Midroog was downgraded 14 levels, after which it immediately requested that Midroog stop rating its bonds. Delek Group’s rating with Maalot was downgraded four levels, but remained investment grade at BBB-. At the beginning of May, it was again downgraded, to CCC (on the brink of default). Among the industries, there were prominent ratings downgrades for companies in the real estate, trade and services, oil and gas exploration, and financial services industries—all of which were adversely impacted by the crisis (Figure 19).



²² Maalot is wholly owned by Standard and Poor’s, and Midroog is partly owned (51 percent) by Moody’s.

²³ Of those, the ratings of two companies were lowered by both ratings agencies.

Other than ratings downgrades, the ratings companies put 17 additional companies on negative creditwatch outlook between March and May 2020.²⁴ Being put on a negative creditwatch outlook means that in view of uncertainty with negative potential, the ratings agency examines the company's rating beyond the ongoing examination, and a downward change in the rating is possible in the short-to-medium term.²⁵ From an industry standpoint, the real estate and trade and services industries are negatively prominent, as they include most of the companies that were put on negative creditwatch outlook. In addition to a ratings downgrade and being put on the creditwatch list, the ratings outlook was lowered for 11 companies from various industries.²⁶ Lowering the ratings outlook reflects concern that the rating will worsen in the medium term. In parallel, two ratings were issued for companies that had no previous rating, and 68 existing ratings were confirmed²⁷, which were divided almost equally among the ratings agencies. As expected, due to the adverse impact of developments on most companies and the increasing uncertainty throughout the economy, no credit ratings were upgraded during the examined period, none of the ratings forecasts were upgraded²⁸, and no company was put on a positive creditwatch outlook.

The relatively few ratings downgrades in Israel, and the individual cases of ratings downgrades to below investment grade, stand out in comparison with the worsening rating of corporate debt abroad. By way of comparison, between March and May 2020 Moody's downgraded the ratings of about 21 percent of the companies it reviews around the world²⁹, and Standard and Poor's downgraded the ratings of about 19 percent of the companies it reviews around the world up to June 8, inclusive. Moreover, in the US, the ratings on bonds totaling more than \$150 billion were downgraded from investment grade (international) to below investment grade. This amount is more than twice as much as the average amount of "fallen angels" in previous years, and is beyond the peak that was recorded in 2009. A main factor that may explain the differences in ratings changes between Israel and other countries in view of the crisis is the differences in the industry composition of the corporate bond market. In Israel, this market is characterized by a more concentrated industry composition than in other corporate bond markets, with the clear dominance of financial firms and real estate companies, particularly commercial real estate companies. However, as the survey by the Standard and Poor's international ratings agency shows³⁰, these industries also suffered a worsening of ratings. The ratings of about 15 percent of commercial real estate companies, and almost 20 percent of noninstitutional financial firms that it rates were downgraded as a result of the crisis. In addition, the ratings of about 10 percent of the banks and about 5 percent of the insurance companies were adversely impacted. Taking into account downgrades in the ratings forecast and being included on the creditwatch list, the rate of companies adversely impacted climbs to more than 40 percent of commercial real estate companies, noninstitutional financial firms, and banks, and about 15 percent of insurance companies. The impact on the ratings of companies in these industries in Israel was smaller (Figure 19).³¹

²⁴ Not including the 9 companies whose rating was downgraded in addition to a creditwatch listing.

²⁵ For instance, prior to the Delek Group ratings downgrade, Maalot put the group on the negative creditwatch outlook as early as March 12, 2020. When Delek's rating was downgraded on April 1, it remained on the negative creditwatch outlook list, and after it did not succeed at increasing its sources sufficiently in the ratings agency's view, its rating was significantly downgraded again on May 5, 2020.

²⁶ Including a downgrade of one company from the positive creditwatch list to a stable outlook near the beginning of the crisis.

²⁷ Including the issuance of a rating for a new bond, which was identical to the issuer's previous ratings.

²⁸ Excluding 2 cases in which the ratings agency realized a negative outlook, lowered the rating by one level, and then revised its ratings forecast to stable; and one case in which the company was moved from the negative creditwatch list to a negative forecast.

²⁹ <https://www.moodys.com/newsandevents/topics/COVID-19-Effects-007054>

³⁰ <https://www.spglobal.com/ratings/en/research/articles/200318-COVID-19-COVID-19-related-public-rating-actions-on-non-financial-corporations-to-date-11393186>

³¹ As Figure 23 shows, about 20 percent of construction and real estate companies in Israel experienced some form of negative ratings action. However, among domestic commercial real estate companies, just 12 percent of companies experienced such activity, and just 4 percent of commercial real estate companies had their ratings downgraded.

Moreover, even among companies from similar industries, there were fewer ratings downgrades in Israel than in other countries. We compared the changes in ratings in Israel and abroad in a number of industries that were identified by Moody's as particularly hard-hit by the crisis.³² Since their industry classification is not identical to the industry classifications of the Tel Aviv Stock Exchange or the Central Bureau of Statistics, we manually ascribed companies to these industries based on the Stock Exchange classification, the CBS classification, and a manual test of the company's business description. Out of the ten industries listed by Moody's, we managed to classify the highest number of companies to the gas and oil, consumer services, and retail industries. In the gas and oil industry, the rates of about 18 percent of the companies in Israel were downgraded, compared with 31 percent of companies abroad rated by Moody's and 45 percent of companies abroad rated by Standard and Poor's. In the consumer services and retail industries, none of the 25 companies classified into these industries in Israel were downgraded, while 32 percent of consumer services companies abroad rated by Moody's and 15 percent of such companies rated by Standard and Poor's were downgraded, as were 37 percent of retail companies rated by Moody's and 45 percent of retail companies rated by Standard and Poor's.

The relatively few ratings downgrades in Israel may be due to fewer negative economic or financial developments in Israel than in the rest of the world. However, according to the Bank of Israel's staff forecast and projections by international agencies, significant negative growth is expected in Israel in 2020, similar to other advanced economies (Figure 4 above). In parallel, the spreads between yields to maturity on corporate bonds and similar government bonds in Israel increased in a similar way to their increases abroad, and even more sharply at the start of the crisis (Figures 2 and 3 above), and the main stock indices declined even more sharply in Israel than abroad. Therefore, it does not seem that a more positive outlook regarding the real economy or a more positive assessment of the financial markets can explain the gap in the development of bond ratings during the crisis. It may therefore be that the ratings agencies in Israel, at least between March and May, were more cautious than agencies abroad in their downward adjustments of the ratings.³³

The ratings agencies are supposed to help reduce the asymmetry of information between companies and their investors, particularly bond investors. If these companies are late in reacting to negative developments, the negative information on the companies may not have passed to the market. If the information is relevant, it may be discovered in the form of future ratings downgrades or other means, and it may then have an adverse impact on bond prices. Studies show that changes in corporate bond ratings influence market prices, even when the ratings change is not due to a change in the companies' fundamental data (Kliger and Sarig, *Journal of Finance*, 2000). A ratings downgrade of a bond to below investment grade may have a more powerful impact on its price due to fire sales as a result of regulatory limitations (Ellul, Jotikasthira, and Lundblad, *Journal of Financial Economics*, 2011). A study conducted in Israel found that while investors do not respond to changes in ratings outlooks or ratings upgrades, they do react negatively to ratings downgrades. This was particularly true during the Global Financial Crisis of 2008–9 (Afik, Feinstein, and Galil, *Journal of Financial Stability*, 2014). This can lead to the assessment that more significant ratings downgrades, particularly downgrades from investment grade to speculative grade, would, at least in the short term, lead to sharper declines in bond prices, and perhaps also of share prices.

³² <https://www.moodys.com/newsandevents/topics/COVID-19-Effects-007054>

³³ In discussing the changes in ratings in Israel and abroad, we have tried to relate to the differences in the industry structure of the debt markets as well as other potential differences. However, there are other differences that may at least partly explain the differences in the development of ratings, such as differences in market structure, legal frameworks, regulation, company characteristics (leverage, liquidity, and so on), and bond characteristics (seniority, duration, and so on). This review cannot encompass all of these factors, much less control for them as part of a comparison. The aim of this review is to show the differences and encourage discussion.

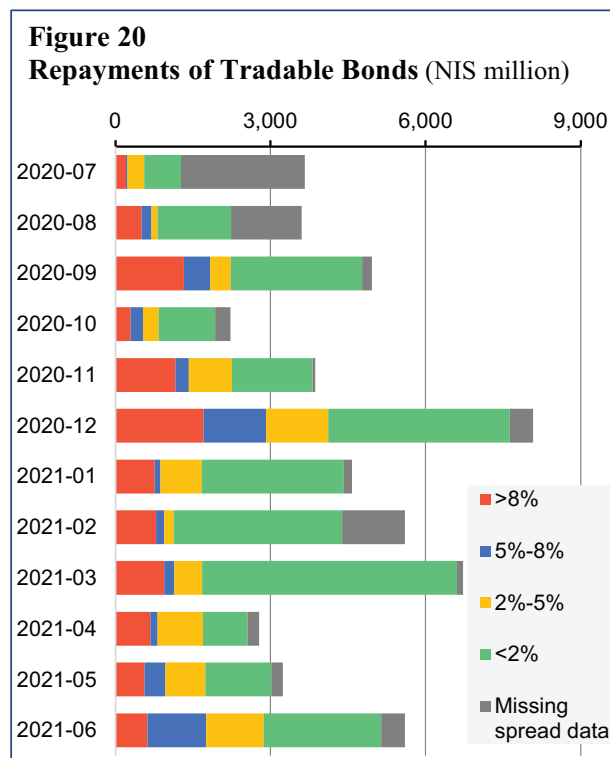
8. THE RISKS IN THE CORPORATE BOND MARKET LOOKING FORWARD, AND BANK OF ISRAEL INTERVENTION

This box focuses on developments in the corporate bond market at the start of the COVID-19 crisis—March–May 2020. However, this section will relate in brief to the situation following the surveyed period, and specifically to the state of the market on July 5, 2020, prior to the Bank of Israel’s announcement of its decision to purchase corporate bonds. It will also briefly discuss the Bank’s decision and its impact on the corporate bond market.

8.1 The flood of repayments and high-yield companies

Companies’ abilities to deal with their debts to bondholders depends not only on their solvency, but also on their expected repayment load in the short term, compared with the liquid sources available to them. Companies that rely on the issuance of new bonds to pay off bonds that are up for redemption (debt recycling) may encounter difficulties during periods of impaired financial activity, particularly activity in the debt market. The more pressing problem is when the financial crisis is accompanied by a crisis in the real economy, which creates uncertainty regarding the solvency of companies in the medium–long term. In the current crisis, the economic-financial impact developed in view of a healthcare crisis and restrictions on activity, which led to a partial or complete shutdown of activity for a varying and sometimes unknown period, which in turn created a cashflow problem for some of the companies. In such a situation, the expected repayment load is of particular importance.

Looking forward, as of July 5, 2020, the companies’ repayment schedule in the coming months seems relatively easy until December 2020, at which time about NIS 8 billion worth of bonds are expected to mature, almost NIS 3 billion of which are bonds traded at a yield spread of more than 5 percent above similar government bonds. Alongside these challenges, we can see that at the peak of the crisis, almost half of the companies with tradable bonds were trading at a two-digit yield³⁴, and on July 5, about 23 percent of the companies (Figure 21), responsible for about 13 percent of the par value of bonds on the Tel Aviv Stock Exchange, were still trading at two-digit yields (Figure 22).³⁵ The companies traded at a two-digit yield on July 5, 2020 were concentrated in the industries that were hardest hit by the crisis. Foreign real estate companies that raised debt on the Tel Aviv Stock Exchange in recent years were particularly prominent in this negative regard (Figure 23).



³⁴ The weighted average of the various bond series of each company, weighted according to the total par value of each series.

³⁵ A large part of the gap between the number of companies with high yields and the total high-yield debt is due to the banks and insurance companies, which account for a significant part of the total debt, and their bonds are traded at a low yield to maturity.

Figure 21
Distribution of Companies with Tradable Bonds, by Yield Group

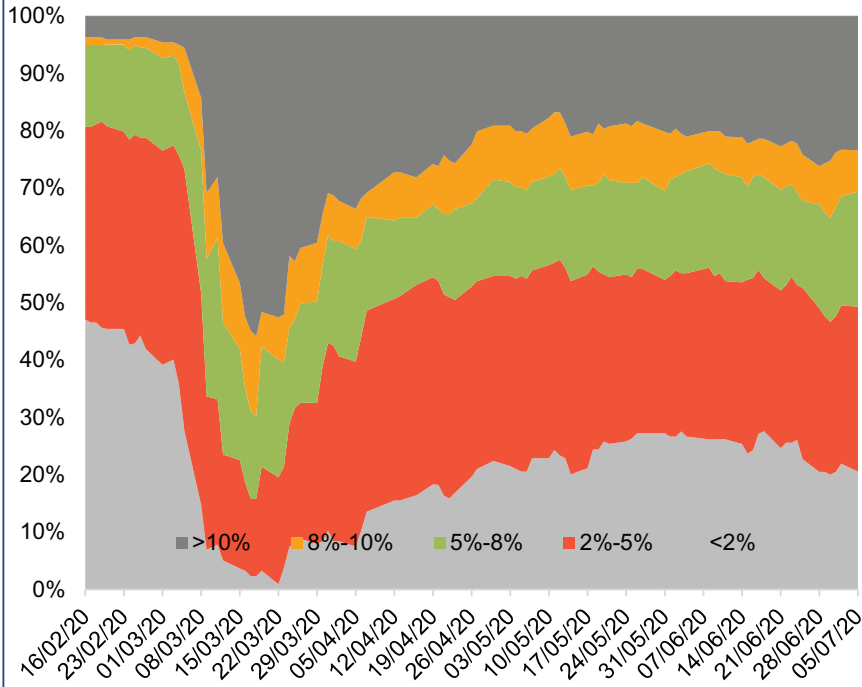
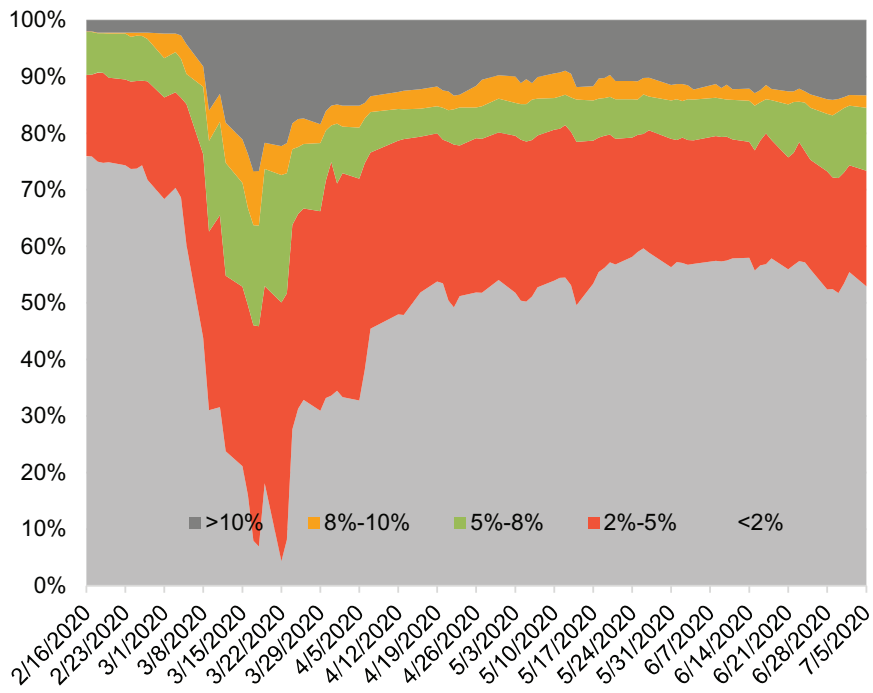


Figure 22
Distribution of Registered Capital of Companies with Tradable Bonds, by Yield Group

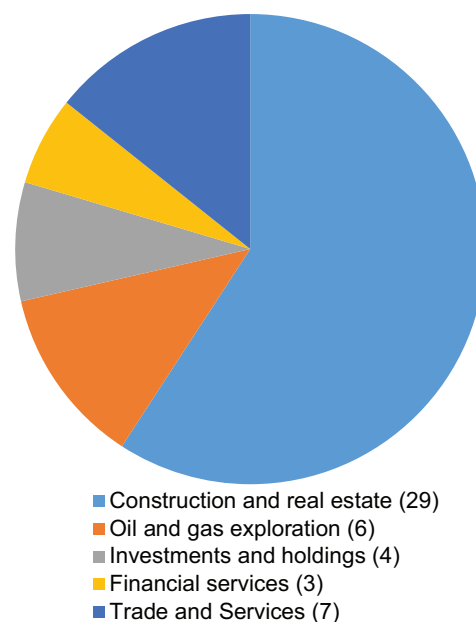


8.2 Bank of Israel intervention in the corporate bond market

On July 6, 2020, the Bank of Israel Monetary Committee decided on an additional set of measures that would continue assisting the economy in dealing with the COVID-19 crisis. These measures included a resumption of the special program to expand the supply of bank credit to small and micro businesses, creating the infrastructure for expanding the variety of assets the banks could provide as collateral against credit in the special program, and the launch of a corporate bond purchase program in the secondary market. As part of the corporate bond purchase program, the Bank of Israel announced its intention to purchase corporate bonds in the secondary market for the first time. The objectives were to ensure the continued orderly operation of the corporate bond market, strengthen the transmission from monetary policy to the credit market by reducing the interest rate at which companies raise credit in the capital market, and free up additional sources of credit to all industries. The Bank announced that it would purchase bonds totaling NIS 15 billion on the basis of a broad benchmark of securities. The benchmark covers about 75 percent of the corporate bond market value, and includes only companies that are rated A or higher. It does not include bonds of foreign companies, bonds with a capital component, or bonds that are not indexed to the shekel and do not carry fixed interest.

The corporate bond market reacted positively to the Bank of Israel’s announcement. The Tel Bond 60 index increased by 2.6 percent on July 6 and 7, and the General Corporate Bond Index increased by 2.5 percent over those two days. Moreover, in June 2020, corporate bonds raised more than NIS 7 billion in debt, but the vast majority of that was by the banks. In the days following the Bank of Israel’s announcement of the corporate bond purchasing program, debt raised by nonbank companies jumped, to a total of about NIS 3.4 billion in the first half of July. Most of this debt—NIS 2.4 billion—was raised following the Bank of Israel’s announcement, by 11 different companies.³⁶ The vast majority of the amount was raised through bonds that are expected to be included in the Bank of Israel benchmark according to the restrictions noted in the Bank’s announcement. These issuances show provide an initial indication that the purchasing program is helping companies raise new credit in the primary market.

Figure 23
Industry Distribution of Companies Trading at a Two-Digit Weighted Yield as of July 5, 2020



³⁶ Six of these companies announced a potential planned issuance before the Bank of Israel made its announcement, but the timing and execution of the issuance may have been positively impacted by the Bank’s announcement of the purchase program.

BOX 4

ANALYSIS OF THE RESILIENCE OF PUBLIC COMPANIES IN VIEW OF THE COVID-19 CRISIS

- This box proposes a tool through which it is possible to estimate the financial strength and liquidity of firms traded on the stock exchange, in a range of one year forward, given certain assumptions, including the restrictions imposed by the government on economic activity.
- The implementation of the methodology presented in this box in a severe scenario, which includes, among other things, an increase in the cost of financing due to the crisis and a resumption of restrictions on movement in the fall similar to the restrictions at the beginning of the crisis, results in the following forecasts:
 - The likelihood of a company encountering cash flow and equity difficulties in 2020 increases the smaller the company is, the more leveraged the company is, and the lower the company's Tobin's Q value is.
 - About 70 percent of the public companies that were analyzed are not expected to encounter cash flow difficulties and/or significant adverse impact to equity in 2020, even in a scenario in which the stringent restrictions imposed on the economy at the beginning of the crisis are resumed.
 - The companies that are expected to encounter liquidity difficulties or a significant adverse impact to equity should the scenario presented in this box be realized have financial debt totaling about NIS 50 billion (about 18 percent of the total financial debt of the companies that were analyzed). However, measures taken by the companies, such as asset realizations and capital injections are expected to moderate the negative effect of the crisis on their repayment abilities.
- An analysis of bond yields shows that the market is pricing in the risks from the companies' fundamentals, as shown in the forecasts presented in this box.

1. Background

The movement restrictions imposed due to the spread of the COVID-19 pandemic led companies to lower their production volumes, and thereby led to a decline on the supply side. In parallel, the restrictions also led to a decline on the demand side, both directly due to the reduction in consumers' mobility, and indirectly as companies reduced their activity, leading to an increase in unemployment that in turn led to a decline in consumption.

The ability to propose a forecast of the extent of the restrictions' negative impact on companies' resilience is very significant. Such a forecast may illustrate for decision-makers another aspect of the economic price of restrictions of varying intensity.

As a rule, a company is defined as solvent as long as it has the ability to service its liabilities in the long term toward all of its interested parties, including payment of both principal and interest to its creditors. Theoretically, the ability to service liabilities toward a company's interested parties is reflected in the company's economic value. A positive economic value reflects the company's ability to generate the required yield for investors, including debt holders. However, the company's economic value is calculated on the basis of forecasts to many forward periods, which reflect many assumptions that involve uncertainty. This approach also does not take into account financial difficulties derived from liquidity problems. The method offered here creates an estimate of the impact of restrictions

of various intensities on the company's financial strength and liquidity for a period of just one year forward, while weighting its liquidity level. It assumes that the company will be able to service its liabilities only on condition that its surplus of assets over liabilities—its equity—is positive and sufficiently liquid (regarding current liabilities). In any other situation, the company may encounter difficulties in paying off its liabilities, and its survivability may be adversely impacted.

This box builds a profit and loss forecast for 2020 for each of the public companies¹, given various intensities of the restrictions imposed by the State. Following that, it uses the profit forecast to quantify the negative impact of the restrictions in 2020 on the companies' equity (financial strength) and their ability to service their debts in the current period (liquidity).

It should be emphasized that this box does not provide a forecast regarding the expected intensity of the restrictions, but only an estimate of the scope of the economic impact on public companies under various scenarios. This is mainly due to the tremendous uncertainty prevailing even in the short and medium terms regarding how the pandemic will spread or fade. The box is structured as follows: Section 4.2 presents the methodology; Section 4.3 describes the data base; Section 4.4 presents the results; Section 4.5 characterizes the companies that may encounter difficulties; Section 4.6 provides a validation for the tool; and Section 4.7 concludes.

2. Methodology

2.1 Building forecast profit and loss statements

The point of departure in building forecast profit and loss statements for 2020 is the statements published by the companies for 2019. In order to estimate the volume of the decline in companies' income and variable expenses from the date on which the government imposed restrictions until June 2020, we use an estimate of the adverse impact on the product of each industry, which was developed in the Research Department's Macroeconomics Division.² The decline in income and variable expenses since June are estimated using various abatement coefficients of the restrictions imposed due to the pandemic: a rapid coefficient, a medium coefficient, and a slow coefficient.³ In another version of the forecast, we present forecast reports assuming an additional closure in the fourth quarter of 2020.⁴

The decline in the volume of company income is expected to lead to a similar decline in the volume of its variable expenses. However, it is not expected to have an impact on the volume of fixed expenses. The financial statements did not include a separate classification for the company's fixed expenses. We therefore sampled a number of companies from each industry and manually classified their expenses into fixed and variable expenses based on the explanatory notes to the financial statements. Based on this classification, we calculated representative weights for fixed expenses as a share of total expenses for the companies in each industry.⁵

¹ In this framework, we chose to focus on public companies, since as opposed to private companies, the data on the financial state of public companies are published on a periodic basis as part of their financial statements. The liabilities of public companies as a share of total credit to the business sector is 40 percent.

² In the real estate activity industry (income-generating real estate), we calculated the adverse impact in accordance with the average mix of uses of properties in the industry's companies (offices, commerce, and manufacturing), and the expected impact in each type of use. In the context of the shutdown rates in the construction development industry, see also Section 2.2.5 of this report "Impact of the COVID crisis on the construction industry".

³ We assume that the use of abatement coefficients reflects a gradual return to full economic activity.

⁴ Within the analysis, we do not take one-off profits or losses into account, including depreciation of inventory and fixed assets, or second-degree effects, and we also do not directly take into account industry-wide impacts due to declines in demand.

⁵ We assume that the expense structure of the companies included in each industry is similar.

Based on the representative weight of fixed and variable expenses, we calculated the expected decline in expenses in 2020, due to the decline in activity, for each company in each industry. After deducting the volume of expected expenses from the volume of expected income, we obtained the forecast operating profit for 2020 for each public company that we analyzed. In order to estimate the EBITDA (an approximation of the company's cash flow from current operations) forecast for 2020 for each company, we added the depreciation expenses recognized by the company in 2019 to the forecast operating profit.

In view of the crisis and the increase in companies' risk premia, the price at which they can raise debt increased.⁶ The increase in the price of debt will lead to an increase in financing expenses for companies that will find it necessary to issue debt in the current year—companies whose current income is not sufficient to cover their current liabilities. In order to estimate the share of financial debt that is to be recycled in 2020, we used the current maturities item in the 2019 balance sheet, which is an estimate of the share of debt that the companies should pay off in the current year. We assumed that the increase in the price of debt for companies in the industry is identical to the rate of increase in average company yields in that industry between March and May, relative to the average yields in the industry prior to the crisis—in January and February.⁷

Based on the forecast statements, we calculate the operating profit, the EBITDA, and the net profit for each company and under each scenario.⁸

4.2.2 Assessing resilience under a specific scenario

As part of the work, a number of scenarios and simulations were conducted, through which the vulnerability of public companies was estimated. In order to simplify and make it easier for the reader, the findings and analyses from here onward are presented on the basis of one scenario, in which we assume that during the period from July 2020, the restrictions imposed by the government will abate at a medium pace⁹, but in the fourth quarter of 2020, they will return to the stringent level that prevailed at the start of the pandemic (and shutdown rates will return to their March–May levels). Furthermore, financing costs will increase for companies that will need to recycle their debt (as outlined in the Methodology section above).

Based on the forecast profit and loss statements, we calculate the following ratios:

- a. The rate of companies—in terms of number and weight of financial debt—that are expected to encounter liquidity difficulties in 2020, i.e. companies whose operating cash flow will not suffice to finance operating expenses or financing expenses, and whose rapid liquidity ratio—i.e. the ratio between current assets (minus inventory) and current liabilities—is less than 1.¹⁰
- b. If the companies have difficulty financing their operations and/or their financing expenses from current operations, they are expected to have to use their equity. In this context, we calculated the rate of companies—in terms of number and the weight of financial debt—whose forecast net loss has a material impact on their equity (to varying degrees of intensity).

⁶ See “Developments in the Corporate Bond Market During the COVID-19 Crisis”

⁷ The provision of assistance by the State may moderate the crisis's adverse impact on companies. This analysis does not take into account the possibility of this type of assistance.

⁸ In calculating expected tax expenses for 2020, we assumed a corporate tax rate of 23 percent, as set out in the law. This assumption ignores the possibility of losses from previous years that could be offset, or a change in tax rates pursuant to Income Tax ordinances.

⁹ Each month, 20 percent of the remaining restrictions from the previous month are removed.

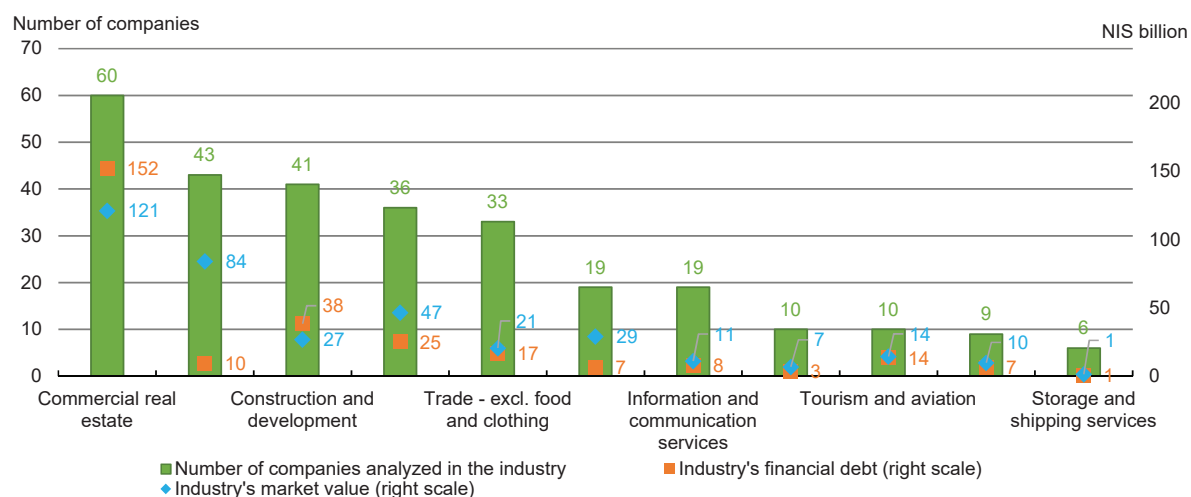
¹⁰ In calculating the liquidity ratio, we assume that companies had less revenue from customers due to the crisis, but that the decline was identical to the decline in companies' payments to their suppliers and other creditors.

3. The public companies included in the analysis

As part of this work, we analyzed the public companies that published financial statements for 2019. In building the group of companies for the analysis, we started with a group of 422 public companies (excluding foreign companies, banks, and insurance companies) traded on the Tel Aviv Stock Exchange in 2019. From this initial group, we removed government companies, whose resilience does not necessarily depend on their financial structure. We also removed holding companies, due to the heterogeneity of their operations, which makes it difficult to classify their expenditures and to estimate their shutdown rates. We also removed financial services companies and nonfinancial companies from the biomed and mining and quarrying (mainly companies dealing with oil and gas exploration) industries, which typically have a relatively unique cost and income structure. Finally, we removed 12 companies that had negative equity in 2019, and we assume that they were vulnerable even before the crisis.¹¹ We analyzed a total of 286 companies. The industry distribution of the companies analyzed is presented in Figure 1.

Commercial real estate companies are responsible for more than half of the financial debt of all companies analyzed.

Figure 1
Industry Distribution of the Public Companies in the Resilience Analysis, by Number of Companies, Volume of Debt, and Market Value



SOURCE: Bank of Israel calculations.

4. The findings

The methodological analysis in this work related to two aspects: the company's repayment and liquidity abilities, and its ability to absorb losses (through an analysis of the rate of impact to equity). When a firm experiences a liquidity difficulty due to the COVID crisis but its equity is strong, it can be defined as a solvent company experiencing temporary liquidity distress. When the impact is more widespread on both levels—both liquidity distress and a significant impact to equity (deterioration of more than 30 percent of equity), the company may become insolvent and may default. A third possibility is that the company does not have a liquidity problem, but as a result of the crisis, it has suffered a significant impact to equity.

¹¹ Most of the companies with negative equity are inactive companies. The companies with negative equity include the "Bezeq" group, whose equity was reduced due to the decline in the value of a held company. From an individual standpoint, it seems that the companies in the "Bezeq" group are not expected to encounter cash flow difficulties. The ratio between the forecast EBITDA and financing expenses in the group is higher than 1.

Table 1 divides all the companies into 4 categories based on these aspects: financial strength and liquidity capability. Low liquidity capability is defined as an expected operating cash flow (EBITDA) that does not cover financing expenses, with a rapid ratio of less than 1. Low financial strength is defined as an expected impact to equity of more than 30 percent. Each cell in the table notes the number of companies in the relevant category.

Table 1: Companies categorized by liquidity and financial strength, after validating the model

Scenario assumptions: a medium abatement coefficient to the shutdown rates, a return to the shutdown rates in the fourth quarter of 2020, and an increase in financing expenses for companies that are expected to recycle their debt

		Liquidity capability	
		Reasonable/high	Low
Financial strength	Reasonable/high	206	44
	Low	14	22

SOURCE: Bank of Israel calculations.

The table shows that in more than 70 percent of the companies, liquidity distress is not expected and their equity is not expected to suffer a significant adverse impact due to the crisis. In contrast, 44 companies with strong equity may experience liquidity distress. These include companies from the real estate industry (construction development and commercial real estate) and companies from the tourism and aviation industries. The table also shows that 22 companies from various industries are expected to experience both liquidity problems and a significant impact to equity during 2020. The volume of financial debt of the companies experiencing liquidity problems and/or a significant impact to equity is about NIS 50 billion (about 18 percent of the total debt of public companies analyzed in this work and about 5 percent of total credit to the business sector), and **most of that**(about NIS 40 billion) is attributed to 44 companies that enjoy strong equity but may experience only liquidity distress. It should be emphasized that some of the companies may take measures, such as asset realization, raising debt, or capital injections, that will moderate the negative effect of the crisis.

5. What are the characteristics of the companies that are expected to experience difficulties?

This section discusses the characteristics of the companies that, according to our estimation, are expected to encounter cash flow difficulties or significant impact to their equity. We characterize the companies through two probit regressions. In one regression, the dependent variable is a dummy variable that obtains the value of “1” for companies that are expected to encounter difficulty in servicing their financing expenses from the cash generated by their current operations (the forecast ratio of EBITDA to financing expenses is less than 1) given the scenario in the box, and “0” otherwise. In the second regression, the dependent variable is a dummy variable that obtains the value of “1” for companies that are expected to suffer a significant impact (more than 30 percent) to their equity under the scenario in the box, and “0” otherwise. The explanatory variables are the companies’ financial characteristics, including company size (in terms of assets), leverage, available liquidity (in terms of rapid ratio), and relative market value (Tobin’s Q). We also included dummy variables for the industry in each regression (Table 2). The findings of the regression show that a company’s likelihood of encountering cash flow difficulty or a significant impact to equity in 2020 increases the smaller the company is, the more leveraged it is, and the lower its market value is.

Table 2: Probit regression of the likelihood of encountering cash flow difficulties or an impact to capital in 2020 as a direct result of the financial characteristics

	Dependent variable	
	Forecast ratio of EBITDA to financing expenses is lower than 1	Forecast impact to equity exceeds 30 percent
Size	-0.378*** (0.091)	-0.251*** (0.055)
Leverage	2.188*** (0.649)	1.817*** (0.448)
Rapid ratios	0.005 (0.031)	0.003 (0.004)
Relative market value	-0.430** (0.198)	-0.446*** (0.128)
Dummy variable for industry	Yes	Yes
R ²	0.309	0.302

SOURCE: Bank of Israel calculations.

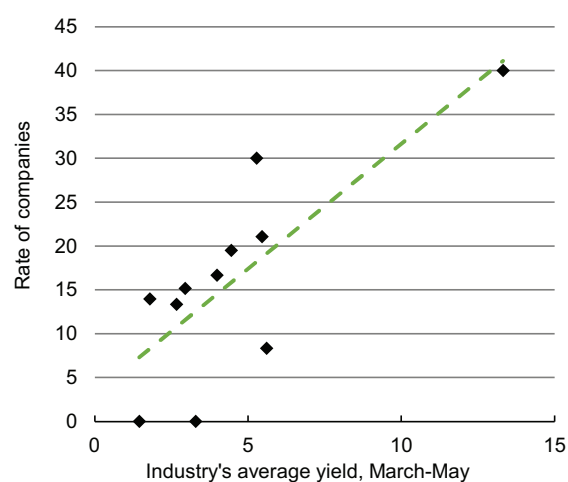
6. Is the market pricing in the difficulties companies can expect in the tested scenario?

The key question from both financial stability and market efficiency standpoints is whether the market is pricing in the negative effect of the current crisis on a company's ability to generate sufficient cash flow to service its expenses and the expected impact to its equity. A finding that the market is on average pricing in the forecast from the analysis in this box would strengthen the validity of the framework proposed in this box. Figure 2 shows the correlation between the rate of companies for which a negative impact to equity or EBITDA is forecast by industry and the industry's corporate bond yield during the crisis.

In order to examine the question, we ran the corporate bond yields of companies analyzed at the end of March and at the end of April through a linear regression on a dummy variable that obtains the value of "1" if the forecast impact to the company's equity in 2020 exceeds 30 percent, and "0" otherwise. The results of the regression are presented in Table 3, and show that there is a positive correlation at a statistical significance of 10 percent between the forecast impact to equity, which is estimated according to the framework in this box, and corporate bond yields since the start of the crisis. The correlation strengthens the validity of the analysis framework presented in this box.

There is a positive correlation between the rate of companies in the industry that are expected to suffer a significant impact to equity and the average yield on corporate bonds in that industry.

Figure 2
The Correlation between the Rate of Companies (by Industry) Expected to Suffer a Significant Impact to Equity and Corporate Bond Yields in that Industry



SOURCE: Bank of Israel calculations.

Table 3: OLS regression of the correlation between bond yields in March and April and the forecast impact on the company's equity

	Dependent variable	
	Yields to the end of March	Yields to the end of April
Forecast impact of more than 30 percent	0.017* (0.009)	0.008* (0.005)
Size	-0.016*** (0.003)	-0.011*** (0.002)
Leverage	0.091*** (0.027)	0.074*** (0.028)
Rapid ratios	0.001 (0.001)	0.001 (0.001)
Dummy variable for industry	Yes	Yes
R²	0.472	0.507
Observations	124	124

SOURCE: Bank of Israel calculations.

7. Conclusion

In view of the spread of the COVID pandemic in Israel, the government imposed mobility restrictions that had an adverse impact on economic activity, including business sector activity. This box developed a tool through which we can estimate the financial strength and liquidity of firms to a range of one year forward, given certain assumptions regarding the restrictions on economic activity imposed by the government.

We used the framework proposed in the box to forecast the repayment capabilities and financial strength of public companies in 2020, based on various assumptions regarding the intensity of the restrictions and their effect (including an assumption that the stringent restrictions that were in place at the start of the pandemic would be reinstated in the fourth quarter of 2020). Following that, we showed that the market is pricing in the forecast risks to the companies. The findings of the forecast we built are positively correlated to a statistical significance of 10 percent with the yields on the corporate bond market.

As part of the scenario presented in the box (among various scenarios that we analyzed) we show that more than 70 percent of the public companies that we analyzed are not expected to encounter cash flow difficulties and/or an impact to their equity. In contrast, 80 companies with a combined financial debt of more than NIS 50 billion are expected, in the scenario presented, to encounter liquidity difficulties or an impact to equity. More than half of these companies are expected to suffer little impact to equity and to encounter only cash flow distress. Those companies have financial debt of about NIS 40 billion. In one-quarter of the 80 companies, the expected impact is more significant, and is reflected in both aspects.

A statistical analysis that we conducted shows that there is a greater likelihood of a company encountering cash flow and equity difficulties in 2020 if the company is smaller, more leveraged, and has a lower market value. It is important to remember that this work analyzed only public companies, which are generally larger than private companies.

Box 5

Sensitivity Tests for the Banks in Israel

- The Israeli banking system's level of resilience prior to the crisis was much higher than that observed in the past (and in particular relative to its resilience prior to the Global Financial Crisis of 2008). In addition, the government and the Bank of Israel, like other governments and central banks worldwide, took extraordinary measures to support the financial and real systems in order to deal with the effects of the pandemic and to reinforce the banks' resilience.
- The sensitivity tests that we carried out on the basis of various credit loss scenarios provide a standard for measuring the stability of the banking system in the short and intermediate terms, and make it possible to identify points of sensitivity of the individual bank and of the banking system as a whole. The results show that in any stress scenario, even one that is particularly severe, the banking system will remain stable.
- Finally, the group of scenarios that we examined revealed the importance of households and small and midsize businesses in determining the stability of the banks. A shock to these sectors is liable to reduce capital adequacy by between 3.0 and 5.1 percentage points. Given the nature of the current crisis, these sectors are particularly exposed to economic and financial distress, and are therefore the focus of the Bank of Israel's attention.

1. Background

Five months after the start of the crisis, it is now clear that the outbreak of the COVID-19 pandemic is liable to bring about a significant and steep decline in economic activity worldwide, at least in the short and intermediate terms. At the onset of the pandemic, the financial markets reacted to the shock with a significant increase in volatility, while regulators and analysts revised their macroeconomic forecasts downward in order to reflect the increasing severity of social restrictions imposed on the general public in response to the pandemic. Governments and central banks worldwide expanded the array of tools used to support businesses and households that are in the eye of the storm. Most of the support was based on the assumption of a positive and rapid "rebound" in economic activity after the lifting of the social restrictions, and the support was planned so as to reinforce the ability of businesses and households to service their debt and improve their immediate liquidity ratio.

The banking system in Israel entered the crisis in a healthy situation. The banks enjoyed large capital surpluses, strong liquidity ratios, and high-quality credit portfolios. Since the global crisis in 2008, the Banking Supervision Department has worked to strengthen the capital and stability of the banks through the adoption of advanced international standards; an improvement in the quality and volume of their capital; diversification of their credit portfolio; a reduction of exposure to large borrowers; and more. However, the systemic, unexpected, and rapidly spreading nature of the pandemic is making it difficult for the banking system and the regulator to carry out stress tests with sufficient frequency.¹ The banks are investing most of their efforts in ensuring the continuity of their core

¹ In this context, it is worth mentioning the banking system's recognition of the importance of increasing the frequency and use of stress tests in order to measure the stability of the system and identify points of vulnerability in the intermediate and long terms.

activity while providing support to their main customers, i.e. households and companies (the business sector).² The sensitivity tests reported on in this publication are, in the opinion of many, an important supplementary tool³ for the evaluation of the banking system's resilience to the current shock and one that provides a platform for a cost-benefit analysis of various interventions, as well as the identification of the mix of shocks that is liable to bring one or more banks below the required capital adequacy ratios.

The sensitivity tests that we carry out are more flexible than stress tests with regard to assumptions and the evaluation of results, and are also easier to carry out. With respect to assumptions, and in contrast to stress tests (which are based on complex models that assume fixed relationships between macroeconomic and financial variables on the one hand and accounting variables on the other), sensitivity tests do not directly rely on statistical and econometric models, but rather on the direct evaluation of the adverse impact—according to various scenarios—to the profit and loss line items and its effect on the banks' stability. Moreover, and in contrast to stress tests, which generate an average forecast under a particular stress scenario, sensitivity tests can be used to generate a distribution of outcomes and to evaluate the likelihood that the banking system will experience distress. Furthermore, carrying out sensitivity tests is much easier and faster, since they do not require a large set of macroeconomic and financial variables but rather only direct assumptions regarding the rates of loss. Therefore, during a period in which the macroeconomic reality is changing rapidly and in which the past relationships between it and the results of the banks' business activity are perhaps not all that relevant, the ability to systemically examine the stability of the banking system needs to be rapid and agile. Sensitivity tests that are carried out in parallel to the traditional stress tests meet this need.

2. International survey

Since the start of the crisis, the authorities responsible for the stability of the financial system (i.e. the Bank of Israel and its Banking Supervision Department) have adopted a series of measures to support the supply of credit to the economy. These supervisory bodies have taken steps to ease restrictions imposed on the banks, including capital and other restrictions, and/or steps that lead to less stringent supervision. The decisions have been manifested in more flexible accounting rules and more cautious criteria for the classification and measurement of banking exposure to the crisis.⁴ At the same time, the organizations that set international standards have provided additional relief by deferring the imposition of new standards (such as the Basel Committee on Banking Supervision – BCBS), and have publicly supported similar steps on the national level (the G20 group, the Financial Stability Board (FSB) and the BCBS). All of these initiatives have one feature in common, namely the adoption of policy that is less focused on stability, with the goal of supporting economic activity.

The reason for this approach is clear: The global economy is facing a major shock, such that policy makers are seeking to “anesthetize” it for a while in order deal with the public health crisis. Force majeure is dictating that the goal of policy should be first and foremost to mitigate the shock and to prevent economic and social collapse.

² The Bank of Israel has allowed the banks and the credit card companies to defer the publishing of financial statements for the first quarter until the end of June, instead of the end of May.

³ In this context, see the Fed's announcement that it intends to continue to expand the development of stress tests for the banking system in 2020, and even to supplement it with sensitivity tests: “Alternative scenarios and certain adjustment to portfolios to credibly reflect economic and banking conditions” (May 2020).

⁴ The objective of the accounting standards is to provide an accurate picture of the situation of a company in its financial statements, and the goal of prudential regulation is to reinforce the company's financial conduct. These two goals sometimes clash with one another. For example, when accounting standards rely to a large extent on market value assessments, which are likely to be justified based on the need for transparency, they may lead to excessive procyclical behavior in the financial system (see, for example, FSF (2009) and Bori et al. (2001)). Since many indicators used in policy management, such as regulatory capital, are based on accounting value, they are liable to encourage the banks to behave in a more procyclical manner at the end of the day. COVID-19 has increased these concerns.

Nonetheless, the policy targets in the financial sector should take into consideration the type and scale of the policy modifications. First, if the modifications are excessive they are liable to worsen the situation. Thus, a weaker banking sector will in turn weaken the economy at a time when a resilient and stable financial system is an essential condition for sustainable growth. Furthermore, policy is liable to cause a loss of credibility. Essentially, an asymmetric policy that simply loosens standards in hard times but does not tighten them in good times is liable to encourage moral hazard in the long term.

In this context, the following three guidelines have been proposed by the BIS in carrying out policy modifications: Guideline 1: Modifications should be efficient and aimed at supporting economic activity. This is meant to apply at least during the period of the crisis, and optimally even beyond that in order to pave the way for a healthy recovery.

Guideline 2: The modifications should maintain the health and resilience of the banking (financial) system. The banks should have sufficient capital, liquidity, and profits in order to provide a foundation for sustainable growth later on.

Guideline 3: The modifications should not undermine the credibility of long-term policy. Excessive short-term policy compromises are liable to cause serious damage in the long term. From this perspective, the modifications should be temporary. Transparency is the key in meeting this guideline.

Governments and banks in a variety of jurisdictions have, as mentioned, taken extraordinary measures in order to support the financial and real systems in dealing with the effects of the pandemic. These have included a variety of programs to defer the debt payments of households and businesses, and the provision of government guarantees. In this context, it should be emphasized that the Basel Committee has recommended that the full effect of these tools and modifications on the risk to the banking system should be recognized in the calculation of risk-based capital requirements.

The Basel Committee has also discussed the effect of COVID-19 on the banks' expected credit losses (ECL).⁵ The Basel Committee has recommended that the banks should take the extraordinary support measures into account when calculating their ECL. It also presented a number of revisions to the transition arrangements for regulatory treatment of ECL.

In general, the IFRS 9 standard requires that when calculating ECL, financial institutions should take into account "reasonable and supportable information that is available without undue cost or effort at the reporting date about past events, current conditions, and forecasts of future economic conditions" (see IFRS 9, paragraph 5.5.1 (c)). Banking system regulators are aware of the fact that the current high level of uncertainty leaves little room for information and analysis that is reasonably accurate, reliable and future-looking, which means that the task of producing detailed long-term forecasts and the implementation of sensitivity tests (stress tests) becomes highly challenging. As part of their role as the supreme supervisory authority and in accordance with the spirit of international accounting standards, the BIS and banking system regulators (the ECB, the ESMA, and the EBA) have specified the considerations that financial institutions should take into account in using forecasts for the calculation of ECL in sensitivity tests.

⁵ The tension between accounting regulation and prudential supervision led to disagreement over loss provisions (Restoy and Roldán (2009) and Tsatsaronis (2004)). For a long period of time, the authorities encouraged the bodies responsible for accounting standards to change the rules for loss provisions. This was based on a concern that the rules did not recognize the increasing financial vulnerability of the banks during an economic expansion and thus encouraged growth in the supply of credit. As a result, losses were recognized only when borrowers were on the verge of bankruptcy. Therefore, the banks were called on to cut back on credit after it was already too late. This situation made it necessary to recognize expected credit losses at all times and to revise them in each report, in order to reflect the changes in credit risk. As part of the response, two main accounting codes have recently been put into place: the International Financial Reporting Standards (IFRS) and the Generally Accepted Accounting Principles in the US (US-GAAP), with the goal of adopting a future-looking approach in the calculation of credit losses. The aforementioned codes went into effect in January 2018 and December 2019, respectively.

Collective evaluation of SICR (Significant Increase in Credit Risk)

The estimates of ECL are highly sensitive to macroeconomic forecasts. There is ample evidence that a decline in growth forecasts is liable to cause a significant increase in the probability of default (PD). In particular, the effect of extrapolating short-term growth forecasts to the balance sheets of the banks and applying them to loss provisions is expected to be greater than the effect of actual short-term macroeconomic developments.⁶ When using macroeconomic forecasts and other information that is usually available only on the aggregate level (as is the case currently), the increase in PD that is obtained may show that the various segments (sectors, financial portfolios, etc.) that were evaluated on an aggregate level suffered from SICR even though this increase does not apparently affect all customers uniformly.⁷

Against this background, financial institutions are expected to:

- Consider the adoption of a top-down approach in stress tests and sensitivity tests;
- Recognize lifetime credit losses for those financial assets with a significantly increased level of credit risk, without the need to individually identify financial instruments that have suffered from a SICR.

Use of historical data

IFRS 9 recognizes the fact that the relevance of data declines as the forecasting horizon lengthens⁸ and emphasizes the relevance of historical data.⁹ In this context, the IFRS instructions lead to the conclusion that, in the absence of reliable evidence for specific forecasts, macroeconomic forecasts should provide the most relevant basis for evaluation. Since most financial organizations do not publish their long-term macroeconomic forecasts on a regular basis, financial institutions must use internal macroeconomic research (estimates) and reliable external sources.

In this context, the following is called for:

- To use available historical data (including estimates of potential losses according to sector) only if such data represent a long-term perspective and are free of bias.
- When historical information is dependent on macroeconomic variables, it is only relevant if it includes at least one full economic cycle or if it has been adjusted without any concern that bias has been created.

Use of macroeconomic forecasts for specific years

In using specific forecasts and generating estimates that start from the first quarter of 2020, financial institutions should consider the following:

- Use of the most up-to-date macroeconomic forecasts as an anchor point (IMF, OECD).
- Use of discretion in the process of their revision, such that they will reflect both the lockdown and the severe social distancing measures imposed on the various economies, as well as the nature of the government support measures declared and implemented in all of the countries.

⁶ Forecasts for longer than the short term are not realistic.

⁷ The accounting model currently used by the banks in Israel to calculate credit loss provisions is an outdated model that is based on the loss that has already occurred. According to this model, a credit loss is recognized only when there is a loss event, while interest revenue is recorded on the basis of the contractual payment. To this end, there is also a specific provision that is recorded for large balances that were examined individually. This is also the case for a group provision that is based on past experience in the case of small and homogenous credit balances that are not examined individually, and also in the case of other credit balances that were not judged to be impaired. The banks' main provision for doubtful debts is in fact based on the group calculation.

⁸ "The estimate of expected credit losses does not require a detailed estimate for periods that are far in the future—for such periods, an entity may extrapolate projections from available, detailed information." (IFRS 9, paragraph B5.5.50).

⁹ "Historical information is an important anchor or base from which to measure expected credit losses...In some cases, the best reasonable and supportable information could be the unadjusted historical information, depending on the nature of the historical information and when it was calculated, compared to circumstances at the reporting date and the characteristics of the financial instrument being considered." (IFRS 9, paragraph B5.5.52).

- Wise use of discretion regarding a possible “rebound” in economic activity and the return to the long-term trend, while assigning probability to the possibility that the “rebound” will occur during the current year, despite the level of uncertainty in the background.

It is possible to create a proxy for the economic cost of the pandemic by calculating the potential loss in GDP, namely the difference between the current forecasts and the forecast prior to the onset of the pandemic. In the World Bank’s basic scenario, the loss in annual GDP ranges from 5 to 9 percent from the estimates for the US prior to the COVID-19 crisis, and between 4 and 4.5 percent for the global economy. In the worst-case scenarios, these costs are liable to reach 11 percent for the US and about 8 percent for the global economy. The most recent IMF forecast (2020), which was published in June, already converges to the pessimistic scenarios, according to which the loss in 2020 is expected to be 6.1 percent in the US and 5.2 percent for the global economy. These costs are significantly higher than those estimated for previous pandemics, and exceed those observed during the 2008–9 financial crisis, when the OECD countries lost an average of 3 percent of GDP. Israel’s GDP shrank by about 7 percent during the first quarter of 2020 (in annual terms; Central Bureau of Statistics data). According to the Research Department’s macroeconomic forecasts, a negative growth rate of about 6.5 percent¹⁰ is expected in 2020 and the unemployment rate is expected to be about 6.2 percent (annual average). The beginning of a recovery in the third quarter will lead to growth of about 7.5 percent in 2021. However, the unemployment rate is expected to decline only gradually, and only towards the end of 2021 will it approach the low levels that prevailed prior to the crisis. The debt-to-GDP ratio is expected to reach about 75 percent in 2020. It should be emphasized that the forecast has a particularly high level of uncertainty due to the lack of clarity regarding the duration and severity of the crisis.¹¹

The goal of this box is to perform sensitivity tests for the banking system in Israel according to the guidelines set out by international supervisory bodies.

3. Sensitivity tests

3.1 Methodology

The idea behind the test is to assess the banking system’s sensitivity to short-term business results. To this end, the test makes use of the most recently available data and evaluates the profit of the system (and of each bank) in a situation of various shocks to the line items in the profit and loss statement.¹² In order to gain more in-depth insights, we divided the source of profit into various activity segments. After obtaining the expected profit during the period, we add it to the initial capital for the period and calculate the new capital adequacy ratios, **subject to the simplifying assumption that the risk assets have not changed**. Table 1 summarizes the line items of the profit and loss statement with comments on how each of them was changed for the purposes of the test.

¹⁰ According to the OECD forecast, Israel’s growth rate in 2020 will be about -6.2 percent.

¹¹ Of course, the scenarios also relate to the long-term effects of a prolonged economic shutdown. These are more difficult to quantify, but they may be significant. Failed firms are not expected to make a contribution to output after the lifting of the restrictions, and are liable to cause a disruption of the supply chain for companies that survive. The skills of unemployed workers are liable to erode, and such workers are liable to lose their long-term relations with employers, a costly outcome that requires a long rehabilitation period. Distress and demoralization are liable to influence labor productivity. Past experience indicates that the scars to the social and economic fabric may be deep and persistent (Eichengreen, 2020).

¹² A letter from the Supervisor of Banks to the banking system states that the Banking Supervision Department is aware of the high level of uncertainty prevailing in the current circumstances, which requires every bank to be cautious in assessing the expected credit losses in its credit portfolio. In this situation, the bank’s management should examine all of the information available—prior to the publishing of its reports for the first quarter of 2020—in order to determine the best estimate of expected credit losses from within the range of estimated losses, and accordingly revise the qualitative adjustments in the calculation of the provision, as well as increasing the amounts included in the credit loss provision. This is in order to ensure that the credit loss provision will be sufficient to reasonably cover expected credit losses to the bank’s credit portfolio according to the revised estimate, including the effect of the COVID pandemic.

BANK OF ISRAEL

Table 1: Profit and Loss Statement items		
1	Interest income	Divided by activity segment
2	Interest expenses	Divided by activity segment
3	Net interest income	Divided by activity segment (1-2)
4	Loan loss provisions	Divided by activity segment
5	Net interest income after loan loss provisions	Divided by activity segment (3-4)
6	Noninterest financing income	Uniform assumption throughout the test - 90 percent of the pervious year
	Fees	Uniform assumption throughout the test - 90 percent of the pervious year
	Other income	Uniform assumption throughout the test - 90 percent of the pervious year
	Total noninterest income	Sum of the three previous items
7	Salaries and accompanying expenses	Uniform assumption throughout the test - 90 percent of the pervious year
	Building and equipment maintenance and depreciation	Uniform assumption throughout the test - 95 percent of the pervious year
	Depreciation of intangible assets and reputation	Uniform assumption throughout the test - 99 percent of the pervious year
	Other expenses	Uniform assumption throughout the test - unchanged
	Total	Sum of the four previous items
8	Pretax profit	

Income according to activity segment: The gross spread was calculated for each segment as the ratio between interest income from the segment and total credit in the previous year. Following that, future income was calculated as the spread multiplied by total credit at the end of 2019 multiplied by a uniform risk coefficient (0.97). The income expenses were similarly calculated for each segment: interest expenses from this segment relative to the credit balance in the previous year multiplied by the total credit balance in the present year multiplied by a lower risk coefficient (0.99). The difference between the income and the expenses is net interest income. We next calculated the provision for credit losses within income, which is used to generate various scenarios, as will be explained below.

We carried out this calculation for each of the activity segments surveyed in the banks' reports: households (divided into housing loans, credit cards, and other), private banking (divided into housing loans, credit cards, and other), small and micro businesses (divided into construction and real estate and other), midsize businesses (same division), large businesses (same division), and institutions and foreign activity (in this category—no further disaggregation). For the financial management segment, which broadly reflects the bank's nostro portfolio, we did not, of course, calculate a provision for credit losses, but rather we assumed a specific loss rate that reflects the expected loss in the nostro portfolio (25 percent in all of the scenarios).

By adding up the net income after credit loss provisions, adding the other types of income as presented in the table below, and subtracting other expenses, we obtained the pretax profit. On the assumption that the profit is negative, we also assumed that there is no tax, so that we subtracted the result from capital, as described above. It should be noted that the calculation uses annual rates of loss, and we therefore divided the results by 4 in order to obtain the expected loss per quarter.

Shocks

Due to the lack of data on major credit crises in Israel by activity segment¹³, we sought an alternative source for the magnitude of credit losses. After looking at a number of possibilities, we focused on the one that appeared to be the most reasonable: the results of the stress tests carried out for banks in the US in 2019 in compliance with the Dodd-Frank Act.¹⁴ The published report contains the expected credit losses in each segment of activity in the most severe stress scenario for each of the 18 large banks included in the scenario. Thus, we essentially obtain the distribution of shocks in each sector of activity for 18 events. From this distribution, we derived a number of scenarios according to the various percentiles: The least severe scenario is for the 5th percentile in each segment of activity while the most severe is for the 95th percentile in each segment of activity.¹⁵ We calculated the expected credit losses given the various scenarios and the credit ratios obtained in each scenario. Furthermore, in order to identify the activity segments to which the banking system is most sensitive, we created several scenarios that represent various mixes of shocks according to activity segment, and compared them to a basic scenario, as will be described below.

The disadvantage of using stress test data from the US is well known: The banking systems are different; the characteristics of the borrowers are different; the effect of macroeconomic development on loss rates is apparently different; even the LGD rates are different; etc. However, in the absence of a better alternative, we chose to use the test results since, in addition to an estimate of loss rates in general, they also provide the distribution of loss rates, particularly according to activity segments. Nonetheless, due to the major structural differences in the exposure to housing credit (a more conservative level of leverage, more macroprudential restrictions, etc.), we restricted the rate of the credit loss provision to only the 15th percentile in most of the scenarios, and in the scenarios oriented toward the housing market or households we focused on the 25th percentile value.

4. The data and the results

Table 2 presents the various percentiles of the shocks for each segment (after a discretionary calibration carried out between the segments in the US and the segments in Israel, and some other adjustments¹⁶). The table shows that the loss rates in the scenarios are—unsurprisingly—much higher than those of last year. However, the macroeconomic scenario on which the scenarios are based is not far from that which was realized as a result of the COVID crisis.

¹³ The significant gap between the existing model in Israel and the new (CECL) ECL model is related to the calculation of the group provision for nonimpaired debt: the shift from a past-looking perspective to a forward-looking one. The group provision is a kind of buffer that precedes the specific provision. Currently, the banks calculate the provision according to industry, based on the range of loss rates during the last three years and a minimal threshold set by the Supervisor of Banks. Each bank calculates the location in the range, based partly on the macroeconomic data of each industry.

¹⁴ The document is available at the following link: <https://www.federalreserve.gov/publications/files/2019-dfast-results-20190621.pdf>

¹⁵ In order to get an idea of the significance of the scenarios in the current reality according to the increase in the total credit loss provision of the banks in the US during the first quarter of 2020, the current scenario is located in the range between the 5th percentile scenario and the 25th percentile scenario.

¹⁶ The distribution upon which we based ourselves appears in Table 7 in the stress test document. Since there is no table that provides a division according to the size of the business, and since that is a variable that affects provision rates, we decided that the rates for small and micro businesses would be 1.5 percentage points higher than the average for corporations; for midsize businesses, it would be 0.5 percentage points higher; and for large businesses, it would be 0.5 percentage points lower. In cases where there are no parallel segments (institutions and activity abroad), we based ourselves on the percentiles of the “other loans” segment.

Figure 1 presents the distribution of the ratio of Tier 1 Equity Capital to risk assets after one quarter of losses according to each of the scenarios. The horizontal lines represent the Banking Supervision Department's capital adequacy targets after a one percentage point reduction in capital at the end of March (the upper line is the capital adequacy required of the two largest banks¹⁷). The figure shows that only in the most severe scenario do the banks drop to below the required level of capital adequacy. However, they come very close to the threshold already in the median scenario.¹⁸

In order to identify the segments to which the banking system is most sensitive, we looked at the difference in percentage points between the scenario in which the segment is affected and the point of origin. In the scenarios we examined, a particular segment is affected (in other words, its rate of provision is that of the 95th percentile in Table 2), while the effect on the other segments corresponds to the 25th percentile scenario. We examined the following scenarios: (a) a housing loan scenario; (b) a households scenario (housing loans + other credit); (c) a small and midsize business scenario (construction and real estate + remaining businesses); (d) the construction and real estate scenario (without differentiating according to the size of the business); and (e) the total construction and real estate scenario + households. The results are presented in Figure 2.

As expected, Scenario (e) is the most severe, since it involves a number of segments, although among the other scenarios, the general household scenario (Scenario (b)) is the most severe with respect to the intensity of the shock's effect. The proportion of capital that is erased ranges from 0.7 to 1.5 percentage points. With respect to the sensitivity to small and midsize businesses (Scenario (c)), there is an effect of between 0.3 and 1.3 percentage points in terms of capital adequacy. The construction and real estate scenario (Scenario (d)) is less severe, apparently as a result of the restrictions on sectoral credit, thanks to which the losses from this industry are limited.

5. Conclusion

During a rapidly expanding event, short-term sensitivity tests are apparently a more appropriate stability assessment tool than full macroeconomic stress tests, in the case of both a single bank and the banking system as a whole. The credit loss provisions are the main variable for determining the system's stability—at least with respect to the banking system in Israel and the nature of the current crisis. The test that we have presented is an example of a sensitivity test for the banks under various loss scenarios. Obviously, the scenarios we presented have no preference over other scenarios. However, the tool itself allows for a rapid analysis of the banking system's sensitivity to various credit losses—even if it is less accurate to some extent. This tool can be used to carry out a cost-benefit analysis of a particular intervention measure or in order to identify the mix of shocks that is liable to bring one or more banks to below the required capital adequacy ratios.

Our examination of the scenarios points to the importance of the household segment and the small and midsize businesses segment for the stability of the banks. Given the nature of the current crisis, these segments are particularly exposed to economic and financial stress. The Bank of Israel is therefore devoting much of its attention to them.

¹⁷ We ignore for now the individual additions to capital required of each bank according to additional supervisory processes.

¹⁸ It should be mentioned that this is a major shock the probability of which is not particularly high, as in any stress scenario. The probability of a shock of this magnitude during two consecutive quarters is very small, and we therefore do not calculate the impact on the banking system beyond one quarter.

Table 2: Loan loss provisions by segment - various scenarios

	Provisions in 2019	5th percentile scenario	25th percentile scenario	Median scenario	Average scenario	75th percentile scenario
Households						
Housing loans	0.02%	0.01	0.61	0.61	0.61	0.61
Credit cards	0.05%	0.01	0.01	15.05	10.64	16.4
Other	0.61%	0.6	3.03	6.45	6.9	10.35
Private banking						
Housing loans	0.00%	0.01	1.2	1.45	2.52	1.78
Credit cards	0.00%	0.01	0.01	15.05	10.64	16.4
Other	0.00%	0.6	3.03	6.45	6.9	10.35
Small and micro businesses						
Construction and real estate	0.05%	4.39	7.15	8.35	8.32	9.58
Other	0.85%	2.35	6.45	7.5	8.68	10.08
Medium businesses						
Construction and real estate	-0.25%	3.39	6.15	7.35	7.32	8.58
Other	0.28%	1.35	5.45	6.5	7.68	9.08
Large businesses						
Construction and real estate	0.16%	2.39	5.15	6.35	6.32	7.58
Other	-0.03%	0.35	4.45	5.5	6.68	8.08
Institutional investors	-0.18%	0.69	2.48	3.1	3.38	4.75
Total - activity abroad	0.25%	0.69	2.48	3.1	3.38	4.75
Weighted average of loan loss provisions (by activity segment, weighted by bank asset weights)	0.29%	1.03	3.3	4.67	4.96	6.22

Figure 1
Capital Adequacy Ratio Under Various Scenarios (Maximum,

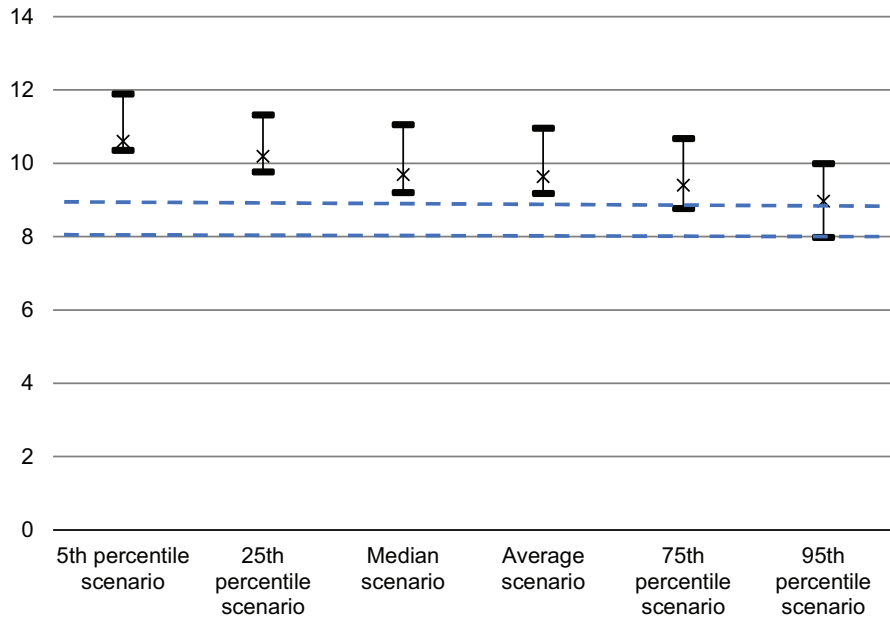
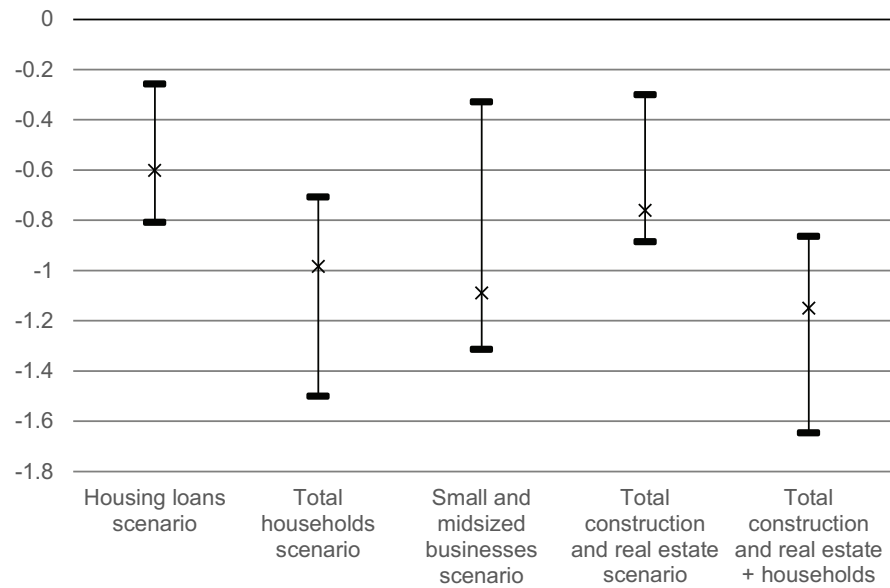


Figure 2
Change in Capital Adequacy Ratio Under Various Scenarios
(Maximum, Median, and Minimum)



BOX 6

THE USE OF PAYMENT CARDS DURING THE COVID CRISIS

- Card Not Present transactions as a share of total transactions increased due to government decisions to restrict gatherings and close businesses between March 10 and April 28.
- The average size of a transaction in installments or “credit” declined from the average observed prior to the crisis.

Card Not Present transactions during the COVID crisis

Card Not Present (CNP) transactions are transactions by payment card that are not carried out by physically presenting the card at the merchant’s payment terminal. Such transactions include providing payment card details over the phone or by entering them on an ecommerce site on the Internet.

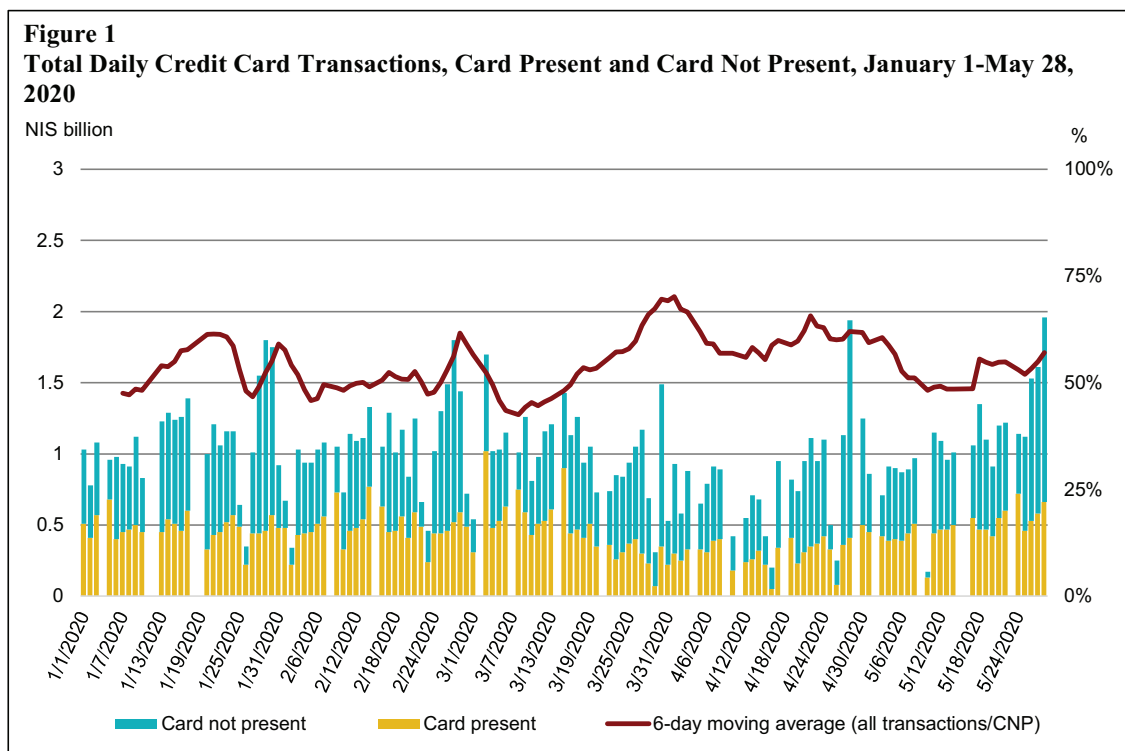
Such transactions differ from transactions made at a merchant’s payment terminal, and their risk profile is higher than transactions made with a present card. CNP transactions expose merchants to greater risk of fraud, due to the lack of the user’s signature and/or the lack of comparing the cardholder’s identity with a different means of identification (driver’s license, ID card).

In Israel, since 2018, the daily total of CNP transactions as a share of all transactions has ranged between 40 and 50 percent. Following the government’s decision to close businesses and restrict gatherings during March and April, the share of CNP transactions increased to 80 percent at the end of April 2020, and returned to its pre-crisis level in May (Figure 1).

According to global forecasts, the volume of CNP transactions will continue to increase in the coming years. Merchants who do not use increased means of identification when carrying out a transaction on site will be exposed to payment refunds, and in serious cases to damage to the merchant’s reputation. On the national level, a high volume of fraud may lead to a negative impact on customer trust and on national efforts to transition from paper-based means of payment to electronic means such as payment cards.

Creating a customer verification mechanism on ecommerce sites is one of the ways to prevent fraud in CNP transactions. In recent years, many merchants have begun using customer verification mechanisms for transactions on their websites by sending an SMS with a password to the customers’ cellphones.

Furthermore, in October 2020, the Payment Services Law will come into force. Among other things, this law sets out that merchant acquirers will not be able to charge the merchant in a case of misuse of means of payment, even if the transaction was made by phone, if the merchant was not able to use increased verification. Moreover, the law sets out that standing bank orders will not be allowed if such a verification item was not used. As such, settlement and issuance companies will be required to develop a solution that will enable customer verification for payment card transactions made by phone, while merchants will be able to choose whether to use this mechanism and be protected in the case of misuse, or do without it.



Payment card transactions by type of credit during the COVID crisis

Payment card transactions can be classified by the type of credit issued to the card holders and its use when making a purchase at a merchant:

- **Debit** – A transaction in which the charge is made close to the time of the purchase.
- **Deferred payment** – A transaction in which the charge is made at a fixed date set by the cardholder.
- **Payment in installments** – A transaction made using consumer credit that the cardholder receives from the merchant.
- **Credit from the issuer (“credit”)** – A transaction made using consumer credit that the cardholder receives from the card issuer.

Between 2018 and 2019, the average deferred payment or debit transaction (calculated as the daily value of transactions divided by the daily number of transactions) ranged from NIS 100 to NIS 250. In contrast, the average installment or issuer credit transaction ranged from NIS 1,000 to NIS 4,000 during that period.

Installment and issuer credit transactions support the cardholder’s ability to make large purchases and smooth the expense over time. Figure 2 shows the spread of daily data on transactions amounts and quantities by type of credit in the pre-crisis period (January–February) and during the crisis (March–April). An analysis of the data shows that during the crisis, the average level of installment and issuer credit transactions declined from the average level prior to the crisis. This conclusion is obtained from the decline in the angle of the slope of installment transactions in March–April relative to January–February, which approximately reflects the average transaction size in installments and issuer credit in each period. The figure also shows that there was no decline between the periods in the average transaction size using deferred payments or immediate debit (the slope actually increased slightly).

The decline in the average size of installment and issuer credit transactions was a direct result of government-imposed restrictions, which prevented the public from accessing merchants where it commonly made large transactions that were spread into installments (travel agencies, appliance stores, and so forth).

On March 2, the day of the elections to the Knesset, there was an increase (in quantity and amount) of installment and immediate debit transactions. According to the data, the card-holding public made installment transactions totaling about NIS 348 million and immediate debit transactions totaling about NIS 117 million on that day.

Figure 2
Spread of Quantity and Amount of Daily Transactions by Type of Credit

