BANK OF ISRAEL

Financial Stability Report

First half of 2021

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The Bank of Israel's Financial Stability Report is published twice a year. In the report, the Bank's economists provide their assessments regarding the main risks to the financial system, analyze the main exposures, and assess potential stress scenarios. The assessments and analyses are based on a review of developments during the reviewed period, an examination of the structural changes in the financial system, use of analytical models, and an assessment of the background conditions in the global and domestic economies. The report presents the risks that could affect the financial system in the short and medium terms should they materialize, with the goal of enhancing awareness of them among policymakers and the public, and of enabling suitable preparations.

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FINANCIAL STABILITY REPORT
First half of 2021

1. INTRODUCTION AND HIGHLIGHTS

1.1 The framework and structure of the report

The Financial Stability Report for the first half of 2021 assesses the stability of the domestic financial system based on an assessment of the environment in which the system operates—the macroeconomic situation, the asset markets, credit to households and to the business sector—and an analysis of the resilience of the financial institutions. The Report thus provides an indication of the economy's various exposures to shocks originating in Israel and abroad. Based on the review of developments, the analytical models, the findings of the Financial Stability Monitor, and an analysis of the financial institutions' resilience, the Report presents the financial system's risk channels, and formulates assessments of the risks to the economy. The Report also presents risk scenarios as derived from the economy's financial exposures, which pose a threat to continued economic activity.

1.2 The challenges to the economy during the exit from the COVID-19 crisis

Economic policy makers are dealing with two main challenges: (1) the need to support economic activity, namely the management of expansionary fiscal and monetary policy; and (2) the risks to macro-financial stability, which are liable to develop into inflation of asset prices to beyond what is justified by long term economic factors.

It is important to emphasize that the uncertainty with regard to the COVID-19 virus and its effect on economic activity has diminished as a result of the comprehensive vaccination of the population in Israel during the initial months of 2021, while there remains a high level of uncertainty in many other countries, primarily due to their relatively slow pace of vaccination. This situation gives the Israeli economy a clear advantage, namely a more rapid exit from the crisis alongside a reduction of the risk facing the financial system due to credit losses. Nonetheless, there is still a risk of a new variant of the virus emerging that is resistant to the vaccine. The risk of imported infection has meant that the incoming tourism sector has not yet returned to its normal level.

With the lifting of restrictions on activity, consumers are once again beginning to spend money, particularly in industries that have been shut down, and at the same time the global prices of commodities and transportation are increasing. These factors have contributed to an uptick in inflation in Israel, with the rate entering the target range. Inflation expectations have also risen for all time horizons, and they are approaching the center of the target range.

According to the US Federal Reserve's Financial Stability Report published on May 6th, the risk of an increase in inflation in the US has risen, alongside a higher probability that the short-term interest rate will increase or that an increase will occur sooner than previously forecast. As a result of the mutual effects between the interest rate in the economy and the decisions of the public with respect to their holdings of financial assets, monetary policy in both the US and Israel has a direct effect also on the financial markets. As a result of the COVID-19 crisis, during which

many countries adopted monetary and fiscal policies that were accommodative to an unprecedented extent, countries have accumulated debt, which has been accompanied by an increase in asset prices. This starting point is expected to have an influence on economic activity in general and on policy makers in particular during the exit from the crisis and the return to routine in the real and financial markets. Section 4.2 examines a scenario that highlights the risks to the financial system and presents one of the challenges facing economy policy makers during the exit from the current crisis.

1.3 Main findings

The level of risk in the financial sector diminished significantly during the first half of 2021, although the risk originating from the financial asset markets remains relatively high. Figure 1 characterizes the financial environment during the period being surveyed using a heat map, which presents the intensity of the economy's exposures over time. Following are the main developments during this period.

- Israel stands out among the OECD countries in terms of vaccinating the population, which has facilitated the exit from the economic crisis. Most other countries are still dealing with the health and economic crises and some of them have experienced widespread economic paralysis as a result of the rise in infection. At the end of the period being surveyed, the level of infection began to rise again as a result of the spread of the Delta variant both globally and in Israel; however, the findings with respect to the possibility of a significant increase in the rates of serious morbidity are still unclear.
- The government deficit declined during the six months being surveyed, to 10.5 percent of GDP (as of May); however, fiscal policy remains expansionary, as does monetary policy which has continued to deploy additional tools, in particular the acquisition of government bonds.
- The interest rate on credit to the business sector remained relatively low during the period being surveyed. This was in part due to the continuing implementation of the monetary program to encourage the providing of loans to small businesses. The demand for mortgages has continued to strengthen during 2021 and the weighted cost of a mortgage has fallen somewhat.
- The trends in asset prices point to a medium-high level of risk:
  1. Stock prices rose during the first half of 2021, and spreads on government bonds continued to fall and reached their pre-crisis levels. There was also greater activity in issuing, particularly of equities, against a background of particularly favorable financial conditions. Various indicators point to an increase in investors' risk appetite and it may be that the pricing of assets does not necessarily reflect the full array of risks.
  2. The decline in investment in the construction industry in 2020 and the first quarter of 2021 has somewhat constrained the supply of housing, a situation that will continue in the medium term. Therefore, the demand for housing, which has picked up as the economy exits the crisis, and the increase in the presence of investors—due to the reduction in the tax on investors and the convenient terms of financing—are being reflected in rising home prices.
- The global environment

Central banks around the world are maintaining accommodative monetary policy and in this way are successfully limiting the economic consequences of the health crisis and allowing the public to cope with the restrictions imposed on it as a result of the pandemic. Against the background of exiting the crisis, the inflation environment has risen in many countries, and particularly in the US, accompanied by a rise in long-term nominal yields. This trend has highlighted the question of inflationary risk: the rise of inflation, if it continues, is liable to hinder

economic activity, in view of the large quantities of debt as a result of the high leverage levels in the business sector. The increase in the inflation environment may derive from the conclusion of the crisis, but may also be the result of the scope of fiscal and monetary expansion adopted worldwide. This policy is liable to bring about a sustained rise in inflation and in turn an increase in short-term interest rates. An increase in interest rates in a situation of high leverage may bring about a major increase in the cost of debt, which in turn may result in multiple bankruptcies in view of the increasing number of zombie companies worldwide.

International organizations have continued to revise their growth forecasts upward—primarily in view of the success of the vaccination program in a number of advanced economies—with the US taking the lead, supported by the additional fiscal expenditure program it has approved. The international organizations emphasize that there is asymmetry in the rate of recovery worldwide and they expect that the recovery in the advanced economies will be more rapid than in the developing countries.

The rise in share prices has continued worldwide and the yield spread on corporate bonds continued to narrow during the half year being surveyed. A number of assessments point to a relatively high valuation of shares and there is increasing concern regarding increased risk-taking on the part of the public.

- The resilience of the financial companies in Israel:

The financial assistance from the State and the providing of the possibility of deferring loan payments has helped borrowers weather the crisis. They were able to adjust their loan payments to their debt financing ability, which contributed to minimizing loan defaults in the financial system. These measures, alongside a lowering of the capital ratios required of banks and in parallel to their continued policy of non-distribution of dividends, have allowed the banking system to provide credit and to support economic activity while maintaining capital ratios above the regulatory requirement. The recovery in economic activity during the final quarter of 2020 and the first quarter of 2021 had a positive effect on business results in the banking sector. Thus, the return on equity in the first quarter of 2021 stood at about 14.5 percent (compared to about 2.4 percent in the corresponding quarter of the previous year)—its highest rate since 2007.

The five largest insurance companies recorded a profit of about NIS 1.5 billion in the first quarter of 2021, which followed a record level of about NIS 3 billion in 2020, despite some adverse impact on their profitability in the second quarter of that year. The rapid recovery from the COVID-19 crisis toward the end of 2020 brought the median solvency ratio—the main indicator of a company's stability—to 116 percent (without the exemptions provided by the temporary directives), which is 16 percentage points higher than the regulatory threshold.

Table 1
Vulnerability of selected exposure channels

	2019:H2	2020:H1	2020:H2	2021:H1
Macro				
Asset markets				
Credit				
Resilience				

* The basis for these assessments is the results obtained from the Financial Stability Monitor. The Monitor is a "heat map" summarizing 51 indicators of possible vulnerability in the financial system. (See the Financial Stability Report for the first half of 2020.)

Very high intensity — Low intensity

1.4 Boxes in the report

Box 1. Analysis of business sector activity by business size with the lifting of social distancing restrictions imposed during the COVID-19 pandemic

In this box, we analyze the reports submitted by employers to the National Insurance Institute on their number of employees and investigate whether and to what extent there was a recovery in the activity of the business sector during the first quarter of 2021, following the lifting of most of the social distancing restrictions imposed during the COVID-19 pandemic. The data shows a trend of recovery in business sector activity in parallel to the decline in infection starting in January 2021. In March 2021, the proportion of businesses that had stopped employing workers (whether by placing them on unpaid leave or by laying them off) was about 16 percent as opposed to 20 percent in December 2020 and 35 percent in April 2020. The main decline in employment reported by employers was concentrated among small businesses.

Box 2. Patterns of payment settlement in the Zahav system[1]

This box presents a pair of indicators for the Zahav system for the period 2013–20. Using these indicators we estimate the risks to the smooth and continuous function of the Zahav system based on the patterns of activity among the system participants. The analysis indicates that the system participants enjoy a high level of available liquidity, which reduces their need to recycle liquidity and in turn lowers the risk of liquidity failures during the

[1] The Real Time Gross Settlement system (known by its Hebrew acronym, "Zahav") which makes final settlement of payment flows in real time possible.

settlement of initiated payments. The activity of the participants in the system is characterized by the execution of large-scale payments early on in the business day, a phenomenon that contributes to the stability of the system.

Box 3. The risks implicit in passive investment

The low cost of passive investment may be good news for investors, but the increased volume of this type of investment raises questions as to its effect on the pricing of financial assets. According to the empirical literature, an increase in the volume of passive investment leads to higher joint volatility of asset prices and as a result raises systemic risk. However, passive investors are characterized by relatively small changes in their holdings relative to active investors. In this box, we survey the mutual fund market in Israel, segment it into passive investments (index tracking) and active investments (managed investing) and distinguish between funds invested in Israel and funds invested abroad. We find that an increase in the proportion of passive investment is correlated with both a stronger relationship (beta) on average between the market portfolio and individual stocks and a drop in the level of mutual fund inflows and outflows. Therefore, these two effects are offsetting each other at the moment and we did not find any evidence of increased comovement.

2. Exposure channels—the environment in which the financial system operates

In this chapter, we examine the environment in which the financial system operates (the Monitor) according to three main sources of risk: economic activity, while differentiating between the domestic environment in which the economy operates and the global environment; trends in the asset markets; and credit in the economy.

2.1 Macroeconomic activity

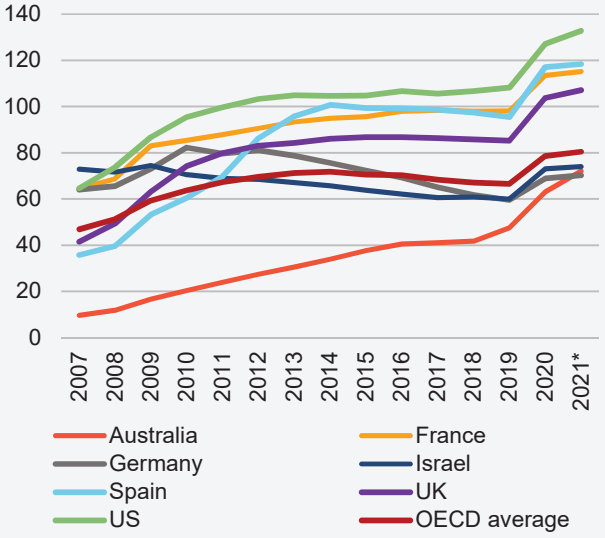
	2020:2	2021:1
The domestic environment: real activity, monetary policy and fiscal policy		
The global environment		

Our assessement is that macro risk has declined during the period being surveyed, as the health crisis in Israel is no longer weighing on most economic activity, which has recovered markedly since the end of the lockdowns. The US economy has also begun to recover, and this is also having a positive effect on the Israeli economy. Despite the improvement in the global environment, the developing countries are still suffering from the health crisis and **the macro risks relate to the concern that risks will spread from abroad to Israel at a time when the unemployment rate is still relatively high**.

2.1.1 The domestic environment

Israel exited the third lockdown in March following a partial shutdown of activity from the end of December 2020.[2] As of April, the economy had largely returned to full activity and there was increasing optimism regarding growth in 2021. Since many firms have already made adjustments enabling them to continue operating even if their employees are at home, the level of unemployment reached during the third lockdown was lower than during the second. Due to the negative effect on the activity of many businesses—including the Purple Pass and Green Pass restrictions until the end of May—together with the acceleration of efficiency measures and digitization, unemployment remained relatively high. The military confrontation and civil unrest in May, which disrupted normal routine, and the consequent economic fallout was focused primarily on industries that had been hardest hit by the crisis. And indeed, the latest indications from the labor market point to a slowdown of the recovery,

Figure 1
Government Debt to GDP Ratio, Selected Countries, Annual Figure for 2007–2020 and 2021 Forecast (percent)



SOURCE: IMF WEO march 2021 update, and forecasts by the Bank of Israel Research Department.

[2] Most of the businesses for which activity was restricted (shopping malls, leisure and culture) returned to normal levels of activity, as did the education system (a return to full activity during the second half of April). However, in other industries, such as incoming tourism and cultural events, which involve gathering together, restrictions are still in place. Nonetheless, at the beginning of June, further restrictions on congregation were eliminated for all types of assembly.

against the background of frictions that have been exacerbated by the crisis. According to the recently published Research Department forecast, the growth rate will be 5.5 percent in 2021, but this is accompanied by an unemployment rate that reached 8 percent during the final quarter of the year.

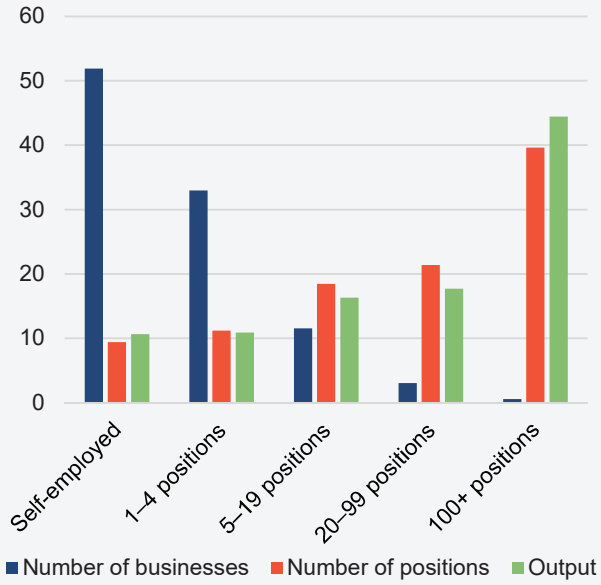
The government deficit declined during the first half of the year to 10.5 percent of GDP (as of May).[3] The debt-to-GDP ratio continued to rise and is expected to reach 74 percent at the end of 2021[4], compared to 60 percent prior to the crisis. Figure 1 indicates the step up in this ratio during 2020 in selected countries and in Israel, as well as the increase in Israel during 2021. Nonetheless, Israel's ratio is similar to the average of the OECD countries.

The Bank of Israel employed new monetary tools to deal with the crisis and has continued to use some of them during the first half of the year. The purchase of government bonds by the Bank of Israel, which totaled NIS 69 billion in June 2021 (which represents about 10 percent of all the issued financial capital in Israel[5]) is maintaining a convenient interest rate environment in support of the growth in household, business and government expenditure in the domestic market. Total domestic issues of negotiable bonds remained high also during the first half of 2021 at NIS 64 billion, compared to NIS 126.4 billion during all of 2020.

As a result of the current account surplus and foreign direct investment in Israel, alongside the sale of foreign exchange by institutional investors, the pressures for appreciation of the shekel continued during the first quarter of the year. In parallel, the Bank of Israel purchased foreign exchange in the amount of $27 billion during the period being surveyed (including June).[6] This development reflects the improvement in Israel's economic situation during the period being surveyed, primarily due to the relatively rapid exit from the health crisis.

Another indication of the exit from the health crisis is the increase in the annual inflation rate to positive territory during the first half of the year. This is in contrast to the period of the crisis when it was in negative territory. The inflation rate during the first half of the year rose to within the target range and was somewhat higher than prior to the crisis. Inflation expectations also increased during the first half of 2021, and entered the inflation target range for the first time since the start of the crisis and reached its midpoint. According to market expectations, the exit from the crisis is releasing pent-up demand that accumulated during the lockdowns, in the case of both consumption and investment, and is creating temporary upward pressure on the CPI. However, the significant rise in disposable income and the wealth effect, alongside the large increase in commodity prices, are liable to push prices up from both the demand and supply sides and may raise them

Figure 2
Distribution of Businesses in Israel by Number of Employee Posts, 2020 (percent)



SOURCE: Based on Central Bureau of Statistics data.

[3] The deficit declined during April–May due to accelerated collection of tax revenues, alongside a moderate drop in the expenditure in the COVID-19 programs and a relatively low rate of performance of the interim budget.

[4] According to the forecast of the Bank of Israel's Research Department.

[5] Total financial capital in the form of Israeli government bonds on the Tel Aviv Stock Exchange was about NIS 670 billion at the end of June 2021.

[6] Even though there was some depreciation as a result of the Bank of Israel's declaration that it intends to purchase foreign exchange in the amount of NIS 30 billion.

to a level beyond that expected as a result of the exit from the crisis. It is important to emphasize that at higher levels of leverage, a deterioration of financial conditions is liable to increase the cost of debt even more.
The gap has increased between the nominal yield curve and the real yield curve, which reflects longer term inflation expectations, including an inflation risk premium, although by only a moderate amount, and therefore the inflation environment is expected to remain positive even after the exit from the crisis. We emphasize that these expectations are derived at a time when the real yield curve is for the most part still negative, a situation that reflects the expectations of continued monetary accommodation in coming years.
The adverse economic impact is concentrated primarily among small businesses (Box 1). The more adverse outcome in the labor market, relative to the negative impact on GDP and direct tax revenue, may be evidence of disproportionate harm to small businesses. The self-employed account for about 50 percent of businesses in Israel and more than 40 percent are small and micro businesses, which employ up to 20 workers (Figure 2). In view of this situation, the Bank of Israel continued its support of the sector through the various programs for providing loans to the banking system with the goal of increasing the supply of credit to small and micro businesses.[7] Following the third lockdown and with the exit from the crisis during the period being surveyed, the scope of loans continued to grow, and since the beginning of the programs it has reached a cumulative total of NIS 37.2 billion (as of the end of June). Despite our assessment that the macro risk has declined during the period being surveyed, the data on the closing of businesses, and primarily small businesses, are likely to change for the worse as government grant programs begin to wind down.

2.1.2 The global environment

Fiscal and monetary policy remained accommodative worldwide and this reduced the short-term risks to global financial stability. Nonetheless, accommodative policy may have a number of unplanned consequences, which may increase the medium-term level of risk, and in particular the overvaluation of assets and an increase in the leverage ratio in the business sector. In addition, the risk of credit defaults among developing economies has increased, particularly in countries that rely on large issues of foreign currency debt.
The trend of global recovery is continuing, though with large disparities between countries: in most advanced economies, there has been rapid economic recovery while in most of the developing countries (apart from China) recovery has been slow. World trade is recovering and in November 2020 it again indicated expansion, for the first time since the beginning of the COVID-19 crisis. According to the trade figures of the CPB[8], the upward trend continued in March 2021 as well. The growth forecasts also point to a solid recovery, though not a uniform one. Many international organizations continued to revise their growth forecasts upward during this period. This followed the success of the vaccination campaigns, an additional fiscal stimulus program in the US, and more favorable than expected data in many countries. In April, the IMF updated its global growth forecast for 2021 to 6 percent, compared to 5.5 percent in the October 2020 forecast. The OECD and World Bank also revised their forecasts upward.[9] All of the international organizations are expecting a non-uniform recovery across countries and believe

7 According to the decision of the Monetary Committee for April 2020, the Bank of Israel extended special loans to the banking system in order to increase the supply of bank credit to small and micro businesses. This framework was expanded in October 2020, and the loans are for a term of 4 years at a negative interest rate of -0.1 percent under certain conditions. This component was limited to a ceiling of NIS 10 billion or until the deadline of June 2021, whichever occurs sooner.

8 Netherlands Bureau for Economic Policy Analysis (translated from Dutch).

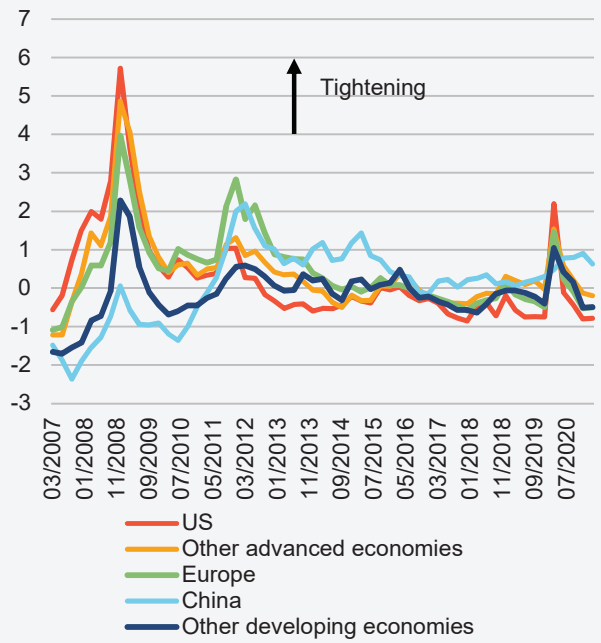
9 The OECD updated its growth forecast for 2021 upward by 0.2 percentage points to 5.8 percent. The World Bank updated its forecast upward in June by 1.4 percentage points to 5.7 percent.

that the advanced economies will recover faster than the developing ones. They emphasize that their forecasts have a high degree of uncertainty due to the difficulty in predicting the spread of infection and the government restrictions that might be imposed in order to mitigate it. This is in addition to the uncertainty in the timing of widespread vaccination and the safety and efficacy of the vaccines against the new strains. The baseline scenarios used by the international organizations assume that countries with a high vaccination rate are not suffering from renewed outbreaks, but in view of the emergence of the Delta strain in recent weeks this assumption may not hold.

One of the reasons for the disparity in the process of recovery is the variation across countries in level of infection and the pace of vaccination. The vaccination program continues to build momentum and its effects on the level of severe morbidity can already be seen in a number of other countries, including the US and the UK.[10] In many countries with low vaccination rates, the governments are maintaining restrictions on economic activity in order to reduce infection, and these restrictions are primarily affecting the services sector.

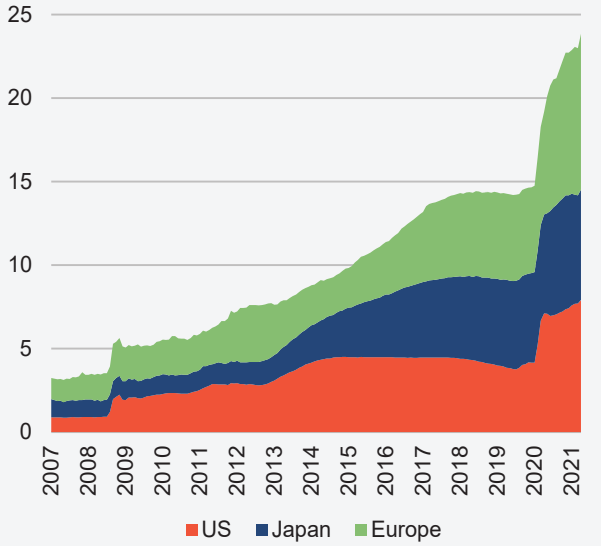
Expansionary fiscal and monetary policies maintained convenient financial conditions (Figure 3).[11] At the beginning of the period, government bond yields rose, while toward the end of the period the trend reversed and yields began to fall, though they remained high relative to the end of 2020. The effect of this increase on financial conditions is currently being partially offset by a decline in corporate bond spreads and the continuing rise in equity prices. Major central banks are maintaining their accommodative monetary policies while also making use of nonconventional tools. Their balance sheets continue to grow (Figure 4), and they have supported low interest rates on both government debt and corporate bonds. Nonetheless, the forward guidance of a number of central banks has recently expressed an intention to trim back accommodative policy in the

Figure 3
Index of Financial Conditions, 2007–2021:Q1
(quarterly data)



SOURCE: IMF GFSR, April 2021.

Figure 4
Central Bank Balance Sheets, 2007–May 2021
(monthly data, $ trillion)



SOURCE: Based on Federal Reserve Economic Data.

[10] The rates of vaccination with at least one dose are 54.02 percent for the US, 66.08 percent for Britain and 64.69 percent for Israel, as of June 30, 2021. Source: Our World in Data.

[11] For further details on the index of financial conditions, see: IMF GFSR April 17, Chapter 3 Annex 3.1.

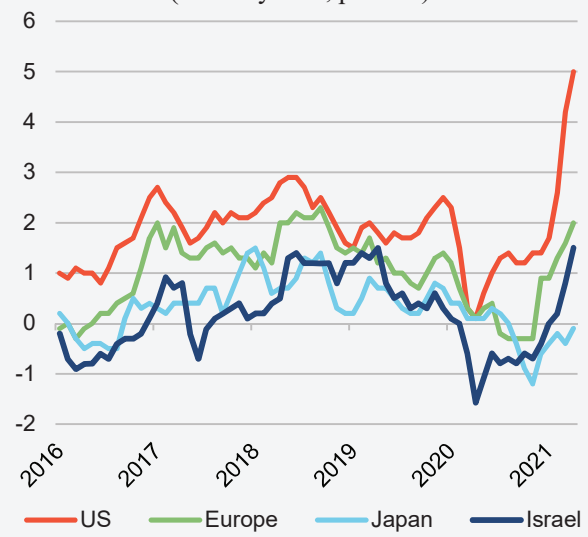
future. The Fed announced the sale of the portfolio of corporate bonds it purchased during the course of the crisis. It also revised its forecasts for interest rate hikes, which now indicate two hikes by the end of 2023[12], and it has started to discuss possible trajectories for reducing its government bond purchase programs. In contrast, the ECB has not changed its forward guidance with respect to a continuation of accommodative policy.

Consumer price indices have risen worldwide and in particular in the US (Figure 5). Some of the increases were the result of economies reopening and problems in the production and transport chains, while others were due to changes in measurement, including changes in weights and the one-off effects related to the prices of goods and services during the reference period, and in particular energy prices. At this stage, many central banks and private forecasters assess that the increases in the price indices are transitory.[13] In general, a moderate increase in inflation can reduce the risks to financial stability by eroding the debt of both the government and business sectors. However, a steeper rise in inflation—which is not transitory and which forces the central banks to adopt a contractionary monetary policy—may lead to a tightening of financial conditions.

Government bond yields have risen worldwide as a result of the expectations of a rapid economic recovery. It is important to mention that this increase has a relatively marginal effect on corporate debt with a speculative rating, since the increase in its yield was partially offset by a narrowing of spreads.

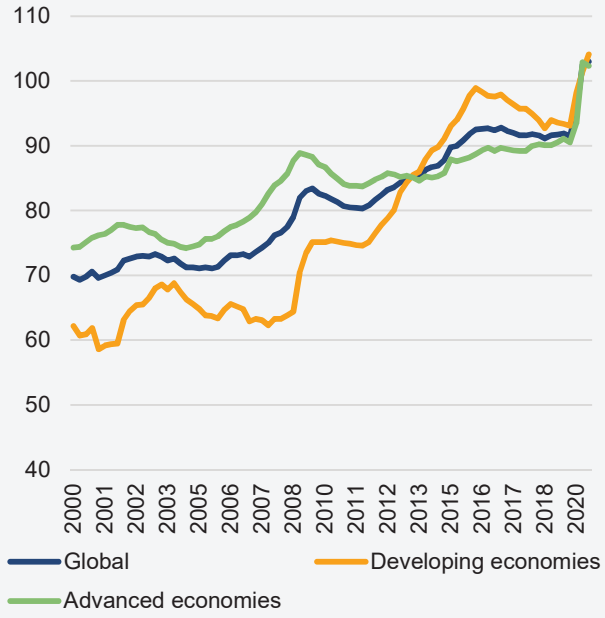
The spreads on government bonds remain narrow in the emerging economies. Nonetheless, a number of factors are raising the concern that the financing terms will deteriorate for these economies: the asymmetry between developed and developing economies; inelastic demand for foreign currency in the emerging markets; and an increase in the yields on US government bonds. The combination of these factors is liable to increase the risk of default among the emerging economies.

Figure 5
Annual Rate of Change in the CPI in Major Economies, Feb. 2016–May 2021
(monthly data, percent)



SOURCE: e-Stat Japan, Eurostate, BLS, and Central Bureau of Statistics.

Figure 6
Nonfinancial Business Sector Debt to GDP Ratio, 2000–2020:Q3 (quarterly data, percent)

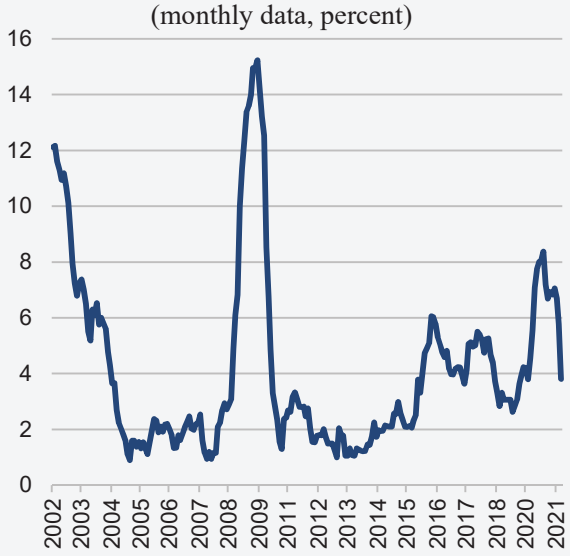


SOURCE: IMF GFSR, April 2021.

[12] The forecasts by Fed members of interest rate hikes in the US were revised upward for both 2023 and 2022 and currently their median forecast points to two interest hikes in 2023 while the forecasts made in March did not expect any hikes during 2023.

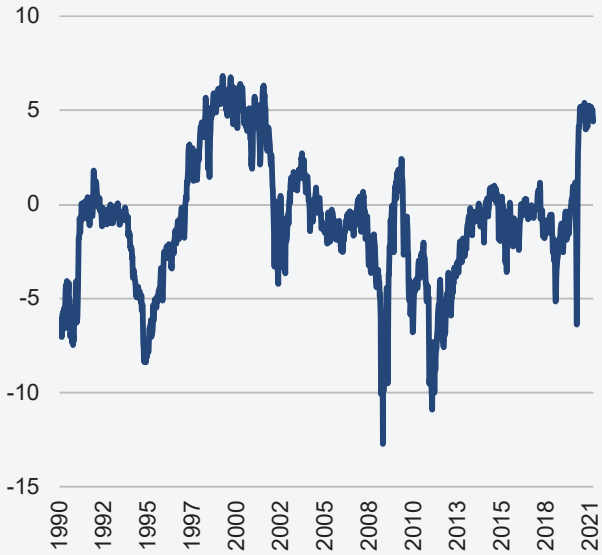
[13] Including Jerome Powell, the Chair of the Fed, who in recent months has emphasized in a number of speeches that the rise in the CPI in recent months is transitory.

Figure 7
Global Failure Rates of Speculative Grade Credit and Bonds, 12 Months Forward, October 2001–May 2021
(monthly data, percent)



SOURCE: Moody's.

Figure 8
Median Deviation from the Fair Price per Risk Unit, 1990–March 2021
(weekly data, percent)



SOURCE: IMF GFSR, April 2021.

The convenient financial conditions, the contraction in GDP and the limitations on activity since the beginning of the coronavirus crisis have led to an increase in the business sector's leverage relative to GDP worldwide (Figure 6). This is liable to create a global risk of default by bond-issuing companies in the medium term as well as an increase in the proportion of companies whose operating profits are used primarily to cover financing costs rather than producing profit for shareholders.[14] It is important to emphasize that at this stage the rate of default among companies with a speculative rating remains low relative to previous crises (Figure 7), which is due to the effect of expansionary fiscal and monetary policies.

Prices on equity markets worldwide have continued to increase. This is supported by expectations of an increase in the profitability of companies as a result of the economic recovery, in addition to the continuation of expansionary fiscal and monetary policies. It may be that the favorable financial conditions created by these polices are encouraging risk-taking by investors. Various indices point to a high valuation of share prices, including the P/E ratio and the IMF index of deviation from fair value per unit of risk (Figure 8).[15] In addition, there was an acceleration in the level of equity issues during the first half of the year relative to the previous year.

The financial situation of the global banking system at the onset of the crisis was stronger than in the 2008 crisis, from the perspective of both capital and liquidity. The sound state of the banks and the regulatory exemptions provided worldwide made it possible for them to continue providing credit during the crisis. During this period, the Fed discontinued the use of some of the tools at its disposal for easing the situation in the banking system and maintaining its stability, and in particular it permitted the distribution of dividends and the buyback of shares in the banking system[16] and the discontinuation of the exemption with respect to the liquidity ratio for holdings of

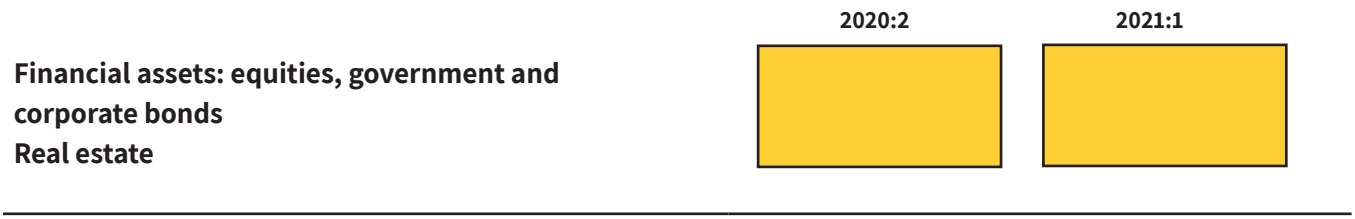
[14] Commonly referred to as zombie companies.

[15] For further details, see GFSR April 21, Annex 1.1.

[16] Fed announcement on March 25, 2021.

government bonds.[17] These measures are evidence of the Fed's confidence in the system's stability. In parallel, and out of concern that fiscal and monetary policy would be tightened during the exit from the crisis, banks in many countries are tightening their underwriting conditions for small and medium-sized businesses. This move is contributing to the stability of the banking system, but it may weigh on small and medium-sized businesses.
The value of the cryptocurrency market rose five-fold during the past year. The sharp increases in the prices of these virtual assets raise the question of whether a significant decline in their prices will risk the stability of the financial system. The ratio between the market value of all digital currencies and the value of the S&P 500 Index is currently only about 3.6 percent.[18] Despite the sharp increase in prices, it appears that as of now the overall market has a low value and therefore a sharp decline in crypto prices would not endanger financial stability.

2.2 The assets market



The trends in asset prices point to a medium-high level of risk in this channel. Equity indices increased during the first half of the year; they were high historically but not relative to other countries. The long-term PE ratio calculated using the indices was also relatively high. The share of corporate bonds held by mutual funds (which during the crisis were characterized by significant redemptions in a short period of time) reached a peak after some rise relative to 2020. Against the background of favorable global financial conditions and low interest rates, there are phenomena, such as the issuing of R&D partnerships and the growth in high-risk assets, which reflect an increase in risk appetite among investors. Yields-to-maturity rose in the government bond market and spreads narrowed in the corporate bond market for all ratings and all industries. In the equity market, there is a high level of issuing. In the bond market, there is an improvement in issuing relative to 2020 although the pace in 2021 is slower than in previous years.
Residential home prices continued to rise, including some acceleration of the upward trend with the exit from the crisis; while commercial real estate prices (according to the financial reports of the commercial real estate companies) declined moderately, in contrast to the sharp declines in the US and Europe as a result of the crisis.

2.2.1 Financial assets

The Financial Stress Index, which is composed of numerous variables based in the financial markets, provides an aggregate picture of the situation in the financial markets during the period being surveyed. It can be seen that the Index is at a particularly low level, a finding that reflects a low level of stress and the lack of any signs of exceptional volatility. Although the stable increase in prices observed in the market is encouraging, it also incorporates risk, in view of the favorable financial conditions, i.e., low interest rates and government assistance measures. Favorable financial conditions characterize most of the global markets and are manifested in phenomena such as a wave of

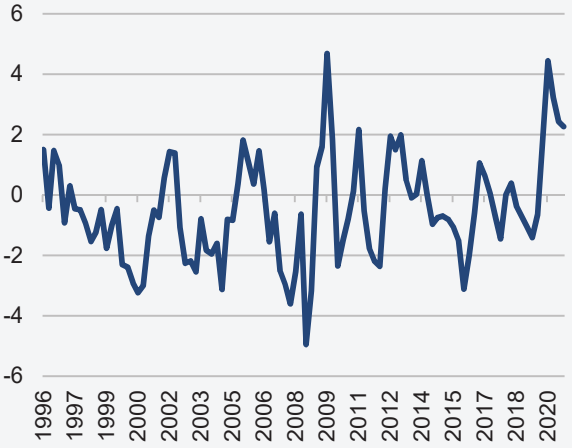
[17] Fed announcement on March 19, 2021.

[18] Estimates of the market value for cryptocurrencies indicate a valuation of about $1.3 trillion as of June 20, 2021, while the market value of the S&P 500 Index is $37.5 trillion.

SPAC issues in the US and the rapid growth of "non-traditional" assets such as the crypto assets, starting in March 2020[19], alongside the return of traditional asset prices (stocks and bonds) to high levels. A change in financial conditions is liable to cause a sharp change in asset prices and therefore will endanger future growth. The high price levels and the risk of a "correction" are also described in the financial stability reports of the ECB and the Fed, as mentioned in the macro section of this report. An examination of this risk using the Growth at Risk (GaR)[20] model (Figure 9) shows that the forecasted slowing of growth according to the worst-case scenario is still a serious threat in historical terms, even though it moderated following the COVID-19 crisis.

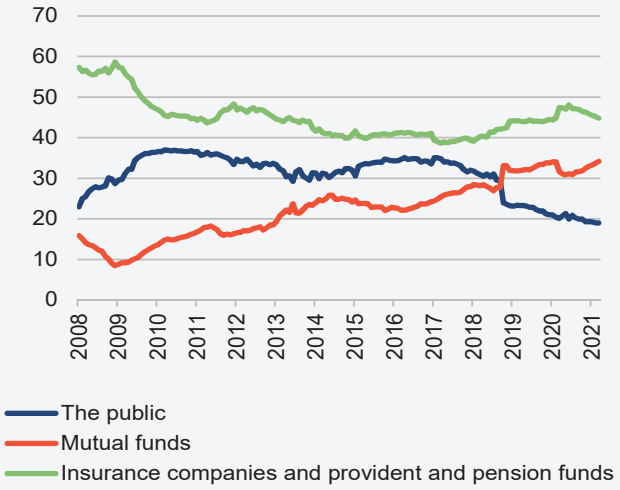
Furthermore, an examination of the holdings of the mutual funds shows that the proportion of corporate bonds they hold has been increasing since 2012 and reached about 34 percent of total registered capital, a record level historically (Figure 10).[21] A change in the market conditions and a decline in risk appetite among investors is liable to cause a large and rapid sell-off in the mutual funds (as in the COVID-19 crisis) and in turn sharp price declines. In May 2021, there was a military escalation, a military campaign (Operation Guardian of the Walls) and a wave of rioting, although the situation did not have a material effect on the prices of financial assets.

Figure 9
The Fifth Percentile of the Distribution of Forecast GDP Growth, by GaR Risk Growth Model to a 1-Year Forward Horizon, 1996–2021:Q1 (quarterly data, percent)



SOURCE: The Bank of Israel's GaR model. A list of sources can be found in the box in the Financial Stability Report for the second half of 2019. The GaR model links the current financial conditions with the forecast growth distribution.

Figure 10
Rate of Corporate Bond Holdings by Holder, 2008–March 2021
(monthly data, percent)



* From November 2018, ETFs are calculated as part of the mutual funds.

SOURCE: Banks' balance sheets, reports by the provident funds and insurance companies to the Finance Ministry's Capital Market Division, and Bank of Israel Information and Statistics Department.

[19] The trade in crypto assets is characterized by high volatility and a changing regulatory environment. See, for example, the announcement of the Bank for International Settlements (BIS) on banks' handling of cryptoasset activities. https://www.bis.org/press/p210610.htm

[20] This model estimates the relationship between current financial conditions and the future distribution of growth (the change in GDP).

[21] Starting from November 2018, ETFs are considered to be mutual funds. This change led to a structural break in the data, which can be seen in the sharp increase in mutual funds' holdings that year (Figure 10).

Government bonds

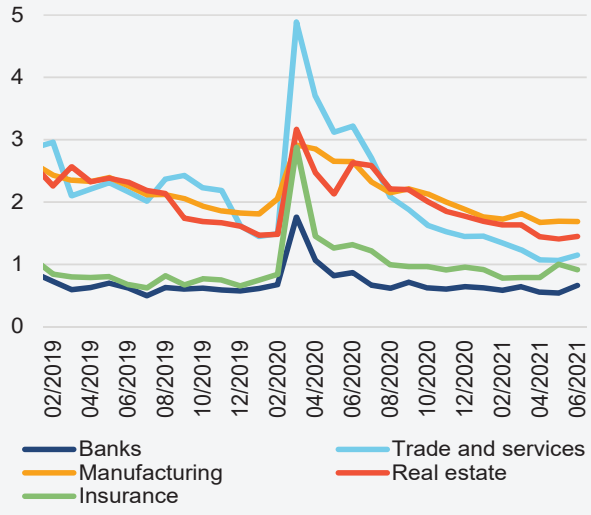
The nominal yield on 10-year government bonds has been on an uptrend since July 2020 and is steeper (from 0.93 percent in July 2020 to 1.36 percent in June 2021) in the most recent data. This may be a sign of expectations among investors of a limited increase in the inflation rate; however, the yield-to-maturity level is low relative to previous years (1.47 percent on average during the previous three years). Yield-to-maturity for non-indexed government bonds has not increased, a finding that supports the hypothesis of a rise in inflation expectations. It is worth mentioning that the increase in yield-to-maturity is similar to that in the US and occurred against the background of the economic recovery from the crisis. The central bank's purchase program, which reached a level of NIS 69 billion (as of June 2021) out of a planned purchase of NIS 85 billion, moderated the rise in yields to some extent.

A comparison to other countries shows that the yields on US bonds have also been on an uptrend since July 2020, against the background of indications of an economic recovery and increased inflation expectations in the US economy. The yields on US bonds are high relative to those on Israeli bonds and the gap is similar to the average for the past three years.

Corporate bonds

The spreads on corporate bonds have been on a downward trend since the second half of 2020 and in most industries they reached pre-crisis levels (Figure 11). An examination of the spread by rating conveys a similar picture. Thus, the downward trend is continuing in the proportion of companies whose bonds are traded at a weighted spread of above 10 percent (Figure 12). This index of risk, which rose sharply during the crisis (to a level of about 50 percent at its peak), began to drop subsequently and its current level is similar to before the crisis and lower than at the beginning of 2019. We would mention that in contrast to the government bond market in Israel, the intervention of the central banks in the corporate bond market was on a relatively small scale.

Figure 11
Spread between CPI-Indexed Corporate Bonds and CPI-Indexed Government Bonds by Industry, 2019–June 2021
(monthly data, percentage points)



Weighted average by market value, excluding structured and convertible bonds.
SOURCE: Based on Tel Aviv Stock Exchange data.

Figure 12
Rate of Companies with a Weighted Bond Spread of More than 10 Percent, 2019–June 2021 (daily data, percent)

Weighted average by market value, excluding structured and convertible bonds, and excluding bonds with a duration of less than 0.5 years.
SOURCE: Based on Tel Aviv Stock Exchange data.

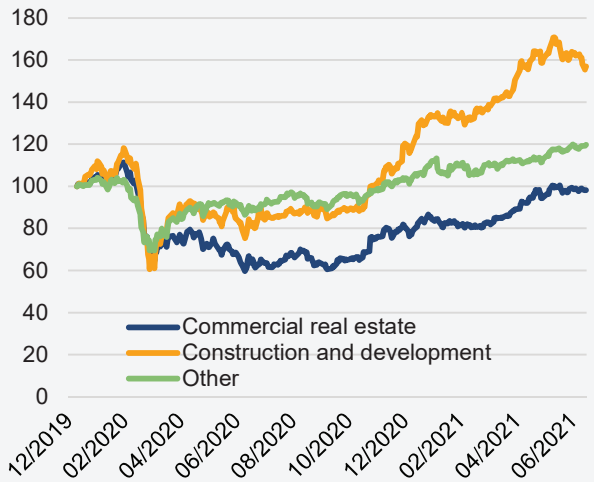
In order to determine whether the pricing of corporate bonds reflects economic and financial fundamentals, we estimated the yield spread (between corporate bonds and government bonds) as predicted by the Excess Bond Premium (EBP) model.[22] The difference between the actual spread obtained from market prices and the predicted spread obtained from the model serves as an indicator of over- or underpricing of risk with respect to fundamental economic and financial factors: if the difference is negative, the risk is being underpriced and if it is positive it is being overpriced. The results of the investigation show that as of the end of the surveyed period there is no clear-cut indication of underpricing of risk and in the commercial real estate industry there is even an indication of overpricing of risk. It may therefore be that investors in the capital market are pessimistic to some extent regarding the future of this industry, apparently due to the uncertainty of the market for office and mall space during the post-COVID-19 period.

Commercial real estate companies, whose share in credit to the economy is 20 percent, have experienced a drop in value relative to the pre-crisis period; however, they recovered subsequently and returned to their pre-crisis level. Also the spreads on bonds in this industry did not rise relative to those in other industries. Nonetheless, comparing the price behavior of stocks in the commercial real estate industry to those of the building and construction industry and to the rest of the stocks shows smaller increases in the commercial real estate industry, and therefore it may be that the crisis has harmed their future profitability (Figure 13).

The high volume of issues in the corporate bond market continued at the beginning of 2021 (after a slowdown during the COVID-19 crisis). The trade and services industry and the real estate and construction industry accounted for a disproportionate share of the issues relative to the average for the previous three years (Figure 14).

An examination of issues by rating shows that most issues were at the high ratings (A- to A+ and AA-), although in the mix of ratings the total issues in the category A- to A+ was greater than the average for previous years, while in the category AA- and above the level was lower than in previous years. The proportion of bonds issued by foreign companies continues to decline (against the background of financial difficulties experienced by some of them in previous periods); the average monthly level of issues since the beginning of 2021 is lower than in previous years; and all of the new issues were in the high ratings, namely AA- and above. The Israel Securities Authority published a draft directive for comments by the public which instructs the mutual funds to examine their strategy for investing in the bonds of foreign companies according their international credit rating rather than only the domestic rating. The goal is to align the composition of the funds' assets with the potential risk of bonds issued by companies without any connection to Israel, based on a global rating scale, as is done when investing in bonds traded abroad.

Figure 13
Cumulative Change in the Value of Publicly Traded Equities by Group, 2020–June 2021
(daily data, index: Dec. 31/19=100)

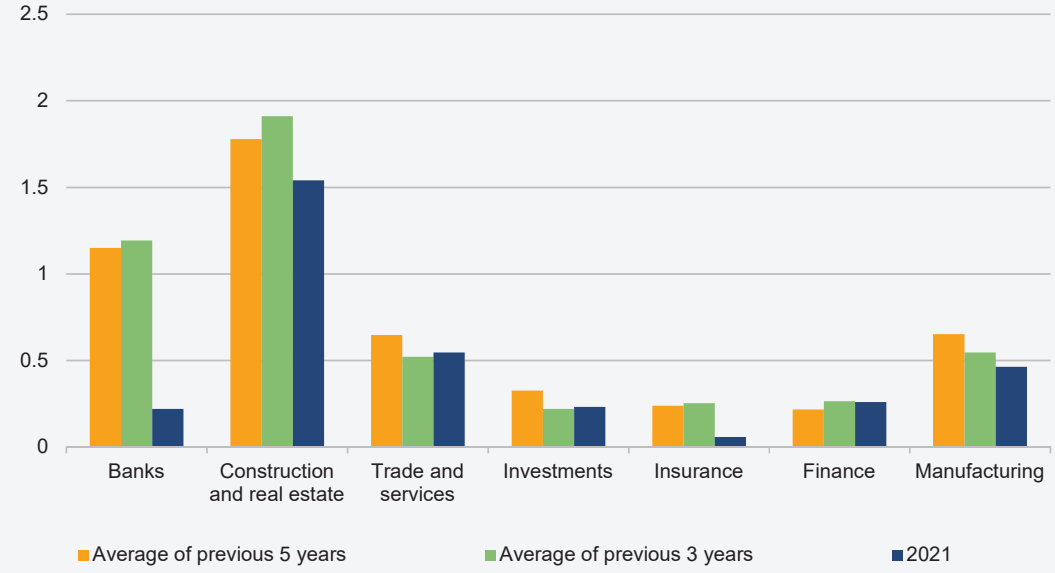


In the classification of equities into the three groups, the real estate and construction companies were classified manually according to their primary activity. All other publicly traded equities were classified as "other". Company value was totaled for each day, and normalized to 100 at the beginning of the examined period.

SOURCE: Based on Tel Aviv Stock Exchange data.

[22] For further details see: Gilchrist, S., & Zakrajšek, E. (2012). Credit spreads and business cycle fluctuations. American Economic Review, 102(4),1692-1720.

Figure 14
Corporate Bond Issuances by Industry and Compared to the Average of Previous Years, as of May 2021 (monthly average, billion)



SOURCE: Based on Tel Aviv Stock Exchange data.

Equities

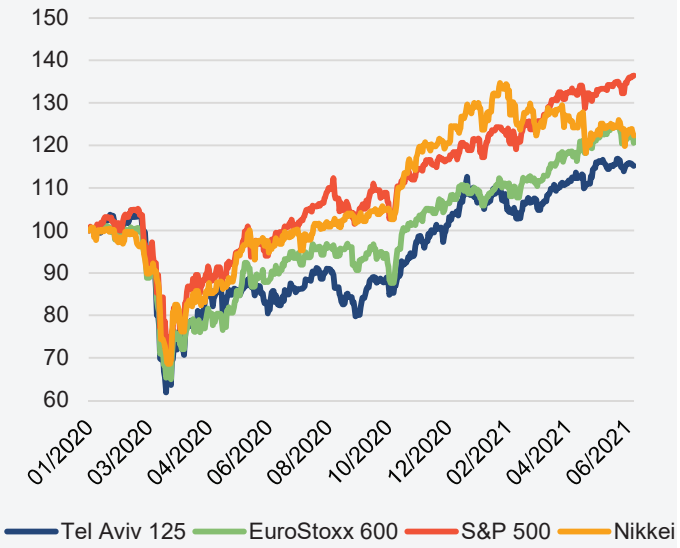
Equity indices in Israel have been on an upward trend since the beginning of 2021 and the Tel Aviv 125 Index had risen by about 11 percent as of June 2021. After a sharp decline during the COVID-19 crisis, most of the indices recovered and even rose to beyond their pre-crisis levels. At the same time, an international comparison shows that the share price increases in Israel since the beginning of the COVID-19 crisis were less than those of the leading indices in the US and Europe (Figure 15). It should be noted that some of the gap is the result of the indices' composition (in Israel, the proportion of the real estate and finance industries is larger than in the US, while the technology industry has less weight in the Israeli indices than in the US index). Taking into account the difference between the indices, the increases since the beginning of the COVID-19 crisis have been similar. Against the background of the stock price increases, the long-term PE ratio also rose (Figure 16). The rise in the PE ratio implies that the increase in share prices was more rapid than that of the earnings reported so far. The high level of the index may be signaling somewhat of a divergence between financial asset prices and real activity. An examination of the share indices by industry shows that the increase encompassed most of the industries and was led by the technology industry (Figure 17).

Against the background of low interest rates and favorable financial conditions, the wave of issues that began in 2020 has continued and even gained momentum (Figure 18). As of May 2021, an exceptionally large volume of shares— a value of NIS 9 billion—has been issued.[23] About NIS 4.5 billion were issued by 46 new issuers, most of them technology companies.[24]

[23] About NIS 1.5 billion were issued by dual-listed companies traded on the Tel Aviv Stock Exchange.

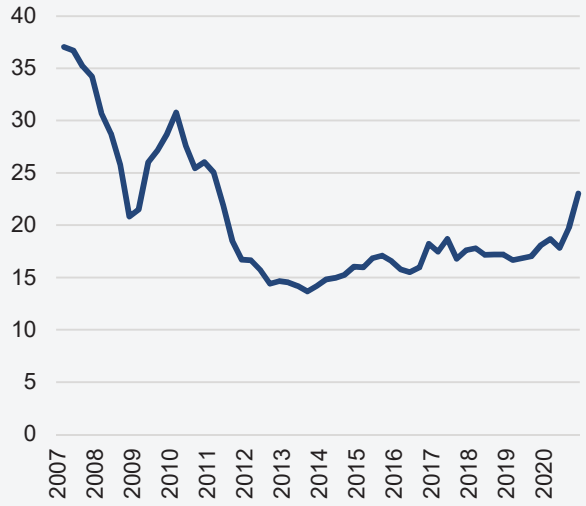
[24] Participation units in R&D partnerships were also issued. This is a new track that was initiated by the Tel Aviv Stock Exchange in 2019. In 2020, units with a value of NIS 300 million (about 1.8 percent of total issued capital) were issued by 5 companies in the technology and biomed industries. In 2021 (as of April), NIS 262.4 million was issued (about 1.8 percent, issued by 6 companies in the technology and biomed industries).

Figure 15
Selected Equity Indices, January 2020–June 2021
(daily data in US dollar terms, index: Jan. 1/20=100)



SOURCE: Based on Tel Aviv Stock Exchange data.

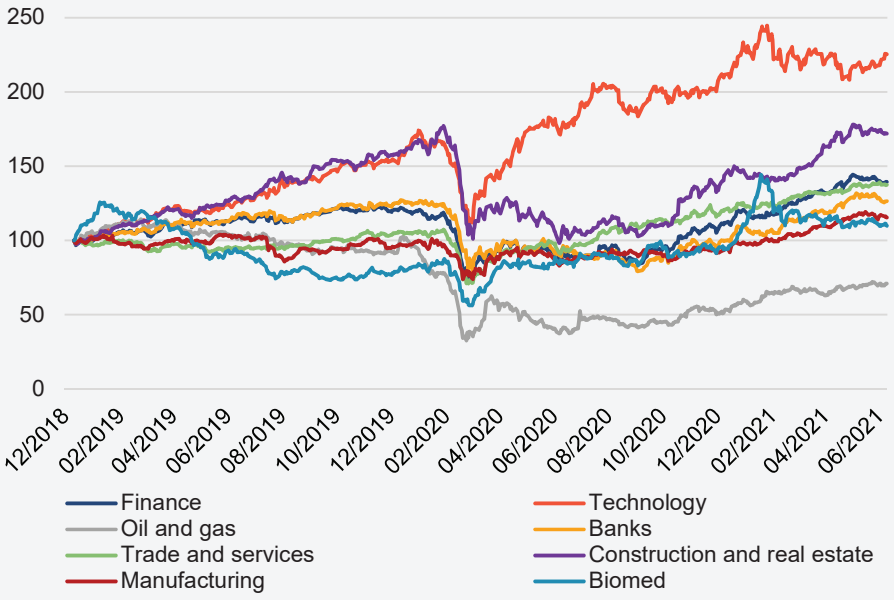
Figure 16
Long-term P/E Ratio*, 2007–2020
(quarterly data)



* Aggregate market value of companies traded on the Tel Aviv Stock Exchange compared with their average aggregate profit in the previous 10 years, adjusted for inflation.

SOURCE: Based on Tel Aviv Stock Exchange data.

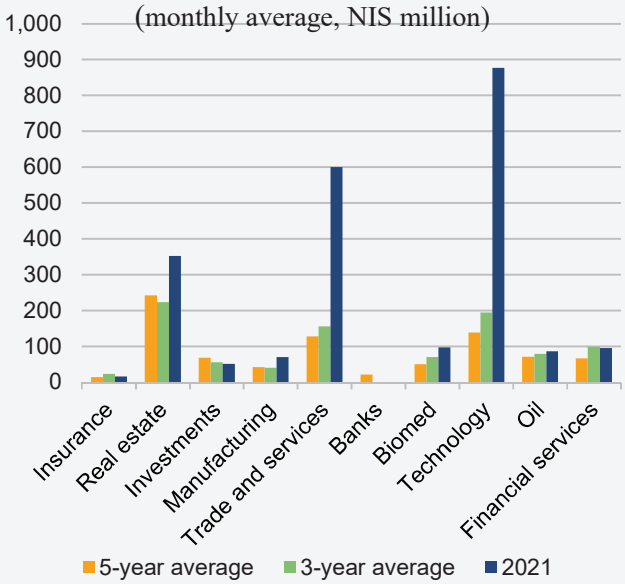
Figure 17
Cumulative Changes in the Industry Equity Indices in Tel Aviv, 2019–July 2021 (daily data, index: Jan. 1/19=100)



SOURCE: Based on Tel Aviv Stock Exchange data.

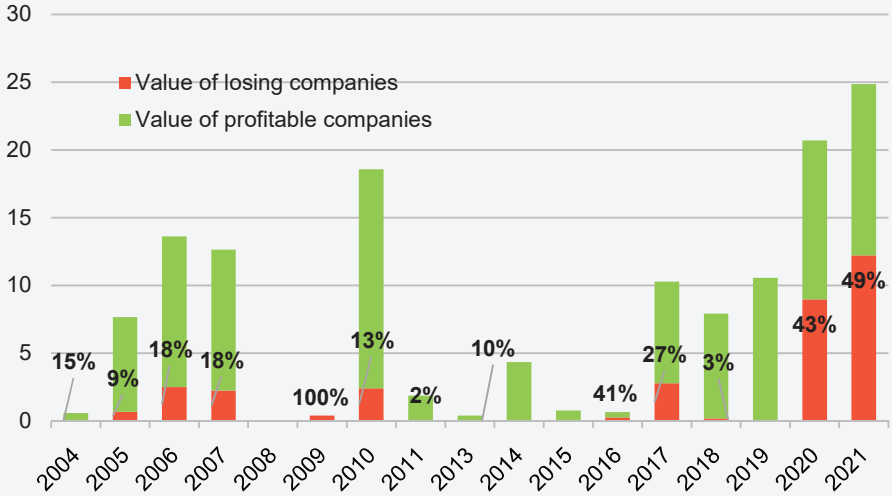
An examination of the market value of the issuing companies shows that 49 percent of them are "losing" companies (companies that had negative net income for the year prior to the year of issue). This is higher than the average in previous years (an average of about 24 percent during the previous five years), which is liable to be a sign of growing risk appetite among investors (Figure 19).

Figure 18
Equity Issues by Industry and Compared to the Average of Previous Years, as of May 2021
(monthly average, NIS million)



SOURCE: Based on Tel Aviv Stock Exchange data.

Figure 19
Market Value of Issued Companies in the Current Year, Unprofitable and Profitable Companies, 2004–May 2021 (yearly data, NIS billion)



The percentages listed are the value of companies with negative net income as a share of the value of companies issued during that year. Losing companies are those that had negative net income in the year prior to their issuance. Calculations are according to market value on the last business day of the corresponding year.

SOURCE: Based on Tel Aviv Stock Exchange data.

2.2.2 The real estate market

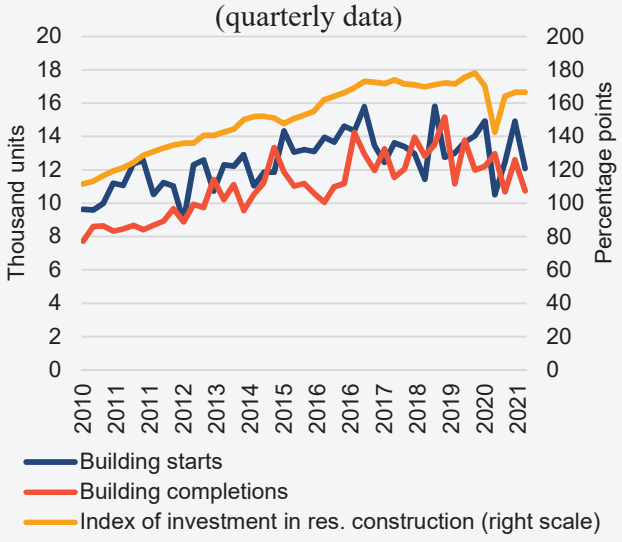
Real estate prices can have a significant effect on financial risk, primarily in cases of steep price declines. This is because ownership of the assets involves high levels of leverage, relative to other assets that serve as collateral for loans.[25]

The housing market

National Accounts data show that investment in residential construction declined in 2020 by 6.6 percent and remained low in the first quarter of the year—2.2 percent less than in the parallel quarter in 2020 (Figure 20). The drop in investment is well-reflected in housing completions, which declined at a significant rate, and in housing starts. It may be that the drop in building starts and completions were the result of problems that have prevailed since the start of the COVID-19 crisis and which were manifested in, among other things, the contraction in activity of the local Committees for Planning and Building and the limitations imposed on the population and in particular on the employment of workers.

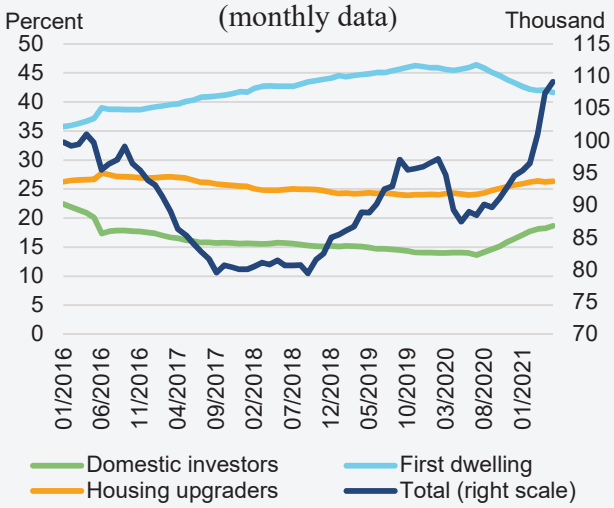
During the later months of 2020, with the expected exit from the COVID-19 crisis, the number of home purchases grew but this was primarily a correction of the contraction during the lockdown months over the course of the year, since the number of transactions in 2020 as a whole was somewhat lower than in 2019 (Figure 21). During the initial months of 2021 (through May), the number of transactions continued to rise and exceeded its pre-crisis level. In the background is an increase in purchases by investors and the continuing high level of demand, as a correction to the low level of transactions during the lockdown months and the period of the economic crisis.

Figure 20
Residential Building Starts and Completions, and Index of Investment in Residential Construction, 2010–2021:Q1
(quarterly data)



SOURCE: Based on Central Bureau of Statistics (nonadjusted series).

Figure 21
Total Home Purchases in the Past 12 Months, by Type of Investor, 2016–May 2021
(monthly data)



Data on the last four months are weighted based on the average proportions of the previously reported data (from 65 percent in the last month to 96 percent three months earlier).

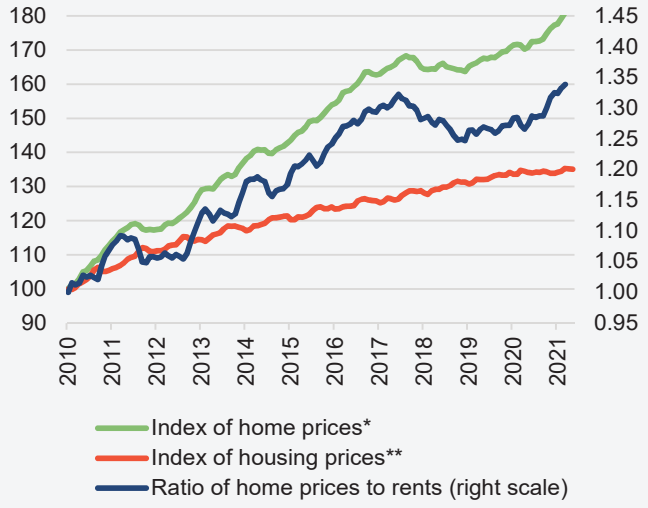
SOURCE: Based on Carman data.

[25] The leverage rates in Israel are significantly lower than those prevalent in most of the OECD countries.

The increase in home prices (according to the Owner-Occupied Home Prices survey) during 2019 and 2020 and also during the period of low transaction volume due to the lockdowns has accelerated and reached an annual rate of 5.6 percent (by March-April 2021). In 2021, and in addition to the upward pressure on home prices, the Residential Construction Inputs Index, which partially reflects the increase in the prices of raw materials and transportation, increased by 2.5 percent from December 2020 until April 2021. This followed a rise of one percent in 2019 and no change in 2020. The annual rate of increase of the Housing Index, which is for the most part based on rents, rose somewhat, and during the initial months of 2021 its rate of increase even slowed (Figure 22). One of the reasons for the acceleration of growth in housing prices alongside the moderation of the increase in rents is related to taxation. The purchase tax on an investment apartment was reduced starting from July 2020, a measure that stimulated demand for homes at the expense of rentals. Contributing to this trend was also the decrease in the interest rate on mortgages, primarily in the unindexed tracks, to below pre-crisis levels. This is in addition to the easing in limitations of the Banking Supervision Department[26], which reduced the cost of the average mortgage. Note as well the low level of transactions carried out as part of the Buyer's Price program. The proportion of these transactions within total new home transactions reached about 44 percent in the summer of 2020, subsequently dropping to 25 percent in January–March 2021.[27] The drop in the proportion of homes purchased as part of the Buyer's Price program, which are relatively low-priced, raises the average price of new homes.

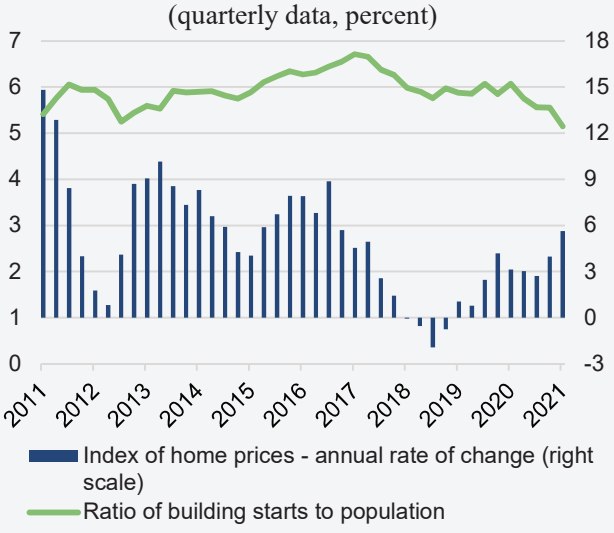
An examination of the long-term pace of construction shows that the supply of housing is not keeping up with the rise in demand, when taking into account the rate of population growth. The ratio of active residential construction

Figure 22
Index of Home Prices, Index of Housing Prices (new and renewing rental contracts) and the Ratio between Them, 2010–May 2021
(monthly data, index: Jan. 31/10=100)



* Survey data, owner-occupied units, updated to March.
** The housing component of the Consumer Price Index.
SOURCE: Based on Central Bureau of Statistics data.

Figure 23
Ratio of Building Starts (sq.m) (sum over four quarters) to the Israeli Population (thousands), and Rate of Change in the Index of Home Prices, 2011–2021:Q1
(quarterly data, percent)



Index of home prices is updated to February 2021.
SOURCE: Based on Central Bureau of Statistics.

[26] At the beginning of 2021, the ceiling on the prime interest component of the mortgage mix was cancelled, and there remained only the restriction on the variable interest component. From now on, at least one-third of a mortgage will be provided at a fixed interest rate and the remaining two-thirds will be decided on by the borrower without being subject to any constraints.

[27] Although the Buyer's Price program has ended, there are still about 40,000 families that have yet to take advantage of their eligibility.

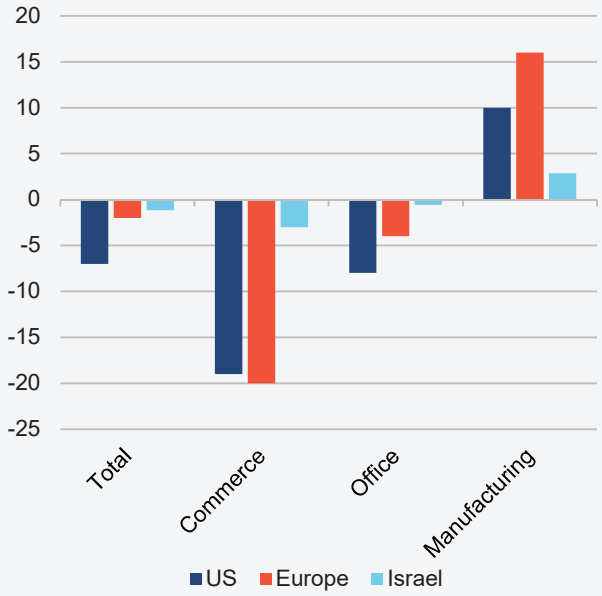
in terms of meterage to population[28] has been falling since the start of 2017. The decline in this ratio steepened during the COVID-19 crisis, reaching historically low long-term levels (Figure 23). The decrease in the marketing of land for residential construction, which began in 2019 and continued in 2020, is liable to maintain the contraction of supply. These trends imply that demand pressures will continue to dominate the housing market. In contrast, the approval of the Reduced Price Housing program at the end of 2020, which includes a number marketing methods in addition to those used in the Buyer's Price program, has expanded the marketing of land and may increase the level of building starts in two to three years, and thus may lead to a drop in demand pressure.

The commercial real estate market

In many countries, the COVID-19 crisis has had a dampening effect on the commercial real estate industry and has intensified the uncertainty in certain segments of the industry due to possible structural shifts in demand and consumption patterns.[29] In Israel, the uncertainty that has characterized the commercial real estate industry during the crisis led to a steep decline in the number of building starts, particularly in terms of commercial space. This is in parallel to changes in rent per square meter, as indicated by an analysis of the financial reports of more than 50 real estate companies that own commercial real estate in Israel[30], and primarily the decline in rents on commercial assets for retail (Figure 24). If this decline continues, it may be evidence of a change in the preference mix in retail habits.

An examination of the changes in commercial real estate prices by asset type relative to Europe and the US (Figure 24) shows that the adverse effect on the commercial real estate industry in Israel was relatively mild.

Figure 24
Annual Change in Commercial Real Estate Prices by Segment and by International Comparison, 2020 (percent)



In Israel, since there are no formal statistics on commercial real estate prices, we calculated the revaluation profit or loss of income-generating properties in 2020 relative to their fair value at the end of 2019 for each segment, based on the financial statements of the publicly traded commercial real estate companies. Regarding Europe and the US, the rates of change of commercial real estate prices were taken from a survey published by the IMF on commercial real estate. The rates of change in Europe are as of January 2021, and in the US they are as of February 2021.

SOURCE: Based on IMF and published financial statements.

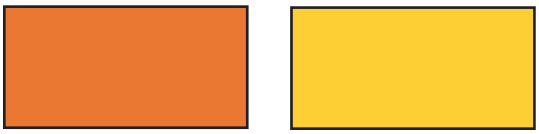
[28] This ratio measures housing starts according to meterage rather than housing units. In view of the increase in the size of apartments built in recent years, measurement according to housing units is expected to produce results that are even lower than those presented in the figure.

[29] For further details: Chapter 3: Commercial Real Estate: Financial Stability Risks During the COVID-19 Crisis and Beyond, Global Financial Stability Report (April 2021), IMF.

[30] Since there are no formal statistics on the prices of commercial assets in Israel (unlike in many other countries), it is difficult to track their trends and to analyze them on an ongoing basis. Therefore, we made use of the information provided in the annual financial reports of public companies in the commercial real estate market. According to our estimates (Box 2 in the Financial Stability Report for the second half of 2018), these companies own about 65 percent of the commercial meterage in Israel, most of which is located in areas of high demand. This information is not based on the entire market because it does not include meterage in low-demand areas, such as urban peripheries, and therefore there may be biases in the calculated data.

2.3 The quantity of credit and its level of risk[31]

	2020:2	2021:1
The business sector		
The household sector		



A number of developments point to a drop in the risk for significant losses in credit to the private sector: the proportion of bank debt for which payments were deferred in the business and household sectors dropped significantly and the level of arrears was low for debt for which servicing was renewed; most of the increase in the proportion of impaired debt in the banking system occurred at the beginning of the COVID-19 crisis; since then there has not been any deterioration, and from the start of 2021, there has even been a decline in impaired debt; and although the proportion of impaired debt rose in industries that were particularly affected by the crisis, this credit does not constitute a large proportion of bank credit to the business sector. An examination of the situation of public companies shows that the level of liquidity is high in all industries, including those that were particularly affected by the COVID-19 crisis; however, in parallel, the level of leverage among these companies has risen.

In the household sector, non-housing credit provided by the banking system declined markedly during the COVID-19 crisis, apparently due to a decline in demand. The credit loss allowances of both the credit card companies and the banks for non-housing household credit grew at the beginning of the COVID-19 crisis and, as in the business sector, there has been no visible deterioration since then. Servicing has already been renewed for most of the debt for which servicing was deferred and the level of arrears in this group is low.

In contrast, there is a continuing upward trend in the risk characteristics for new housing credit. Since mid-2020 new mortgage volume has grown at a high and stable rate, against the background of an increase in the quantity of transactions (for further details, see the chapter on real estate). In parallel, the average mortgage size has increased against the background of a decline in interest rates in loans indexed to the consumer price index and an increase in the share of mortgage components benchmarked to the prime interest rate within the mortgage mix. There was also an increase in the proportion of mortgages with a high loan-to-value ratio and in particular a rate of above 60 percent. In addition, there was an increase in the proportion of mortgages for which the payment-to-income ratio exceeds 30 percent.

2.3.1 The non-financial business sector

The effect of the third lockdown, which began at the end of 2020 and continued into the first two months of 2021, was less stringent than the previous lockdowns in 2020. Furthermore, the exit process from the third lockdown was rapid, starting in February, due to the steep decline in serious infection following the vaccination program.

Following the exit from the lockdown, there was an improvement in economic activity in all industries, as a result of the increase in private consumption. National Accounts data for the first quarter of the year (second estimate) points to a contraction of GDP; however, an examination of the mix of uses paints a positive picture of the economic situation and points to expectation of strong growth in the second quarter.

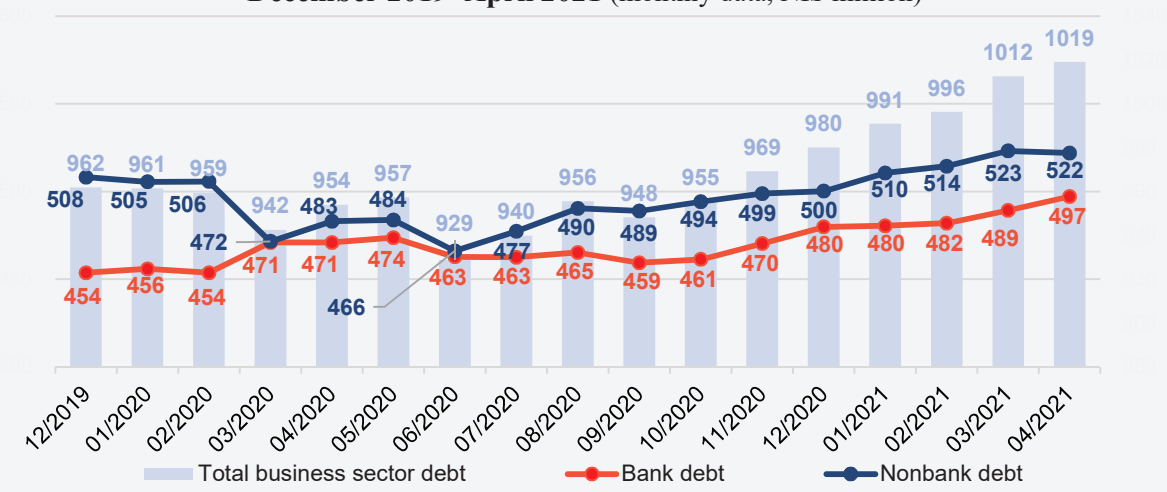
[31] This chapter is based on the most current data available at the time of writing. In general, daily data are available up to the end of June 2021, monthly data are available up to the end of May 2021 and quarterly data are available up to the first quarter of 2021. Nonetheless, since in certain cases data is obtained from a large number of sources and they require processing, it may be that in some cases data will appear with a delay.

In recent months, there has also been increased demand for labor. According to the figures for March, there was a significant increase in the number of job vacancies and in the constraints of hiring of workers. The substitution between incoming and domestic tourism is expected to moderate the continuing slowdown in the tourism industry, which is due to the health restrictions on foreign tourists that are still in place in Israel.

The trends in credit

The quantity of credit to the household sector has grown at a stable rate since the second lockdown. In particular, an acceleration can be seen in the growth of credit provided by nonbank sources and in particular loans from foreign residents and financial institutions, both of which reacted to the onset of the COVID-19 crisis by severely restricting the credit they provide (Figure 25). The requests for credit from the government-guaranteed funds are on the decline, although the growth in bank credit continues.

Figure 25
Development of Business Sector Debt: Bank and Nonbank Debt*
December 2019–April 2021 (monthly data, NIS million)



* Bond balances (under nonbank debt) in terms of registered capital. Nonbank debt incudes credit provided by the credit card companies (that is not backed by the banks), and indirectly includes credit provided by other nonbank credit corporations (through their financing sources).

SOURCE: Based on reports by financial institutions and businesses to the Bank of Israel, financial statements, and the Tel Aviv Stock Exchange.

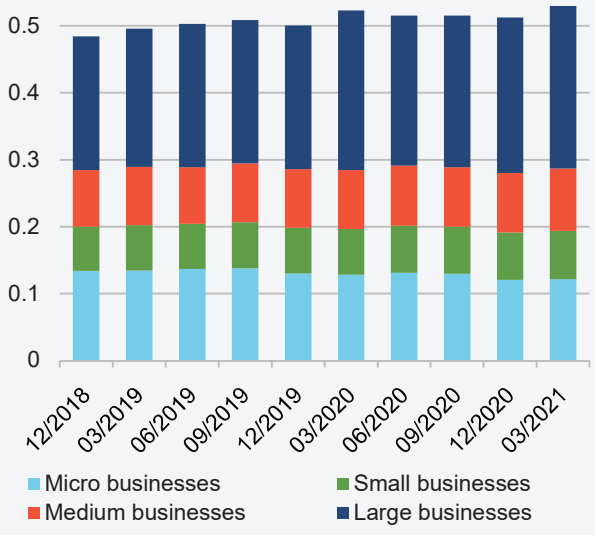
The accelerated growth in credit to the business sector, according to the information reported by companies in the Business Tendency Survey, is also manifested in the greater ease of obtaining financing since the end of the third lockdown. These companies, apart from those in the hotel industry, report difficulty in obtaining financing that is similar to the pre-crisis level.

Credit from the banking system

Credit provided by the banking system to the business sector in 2020 was characterized by an increase in new credit at the beginning of the COVID-19 crisis, against the background of businesses' usage of existing credit lines, particularly during the first lockdown. Subsequently, there was a decline in the use of this type of credit, but toward the end of 2020 it picked up again. This trend characterized all categories of business activity. Thus, bank credit—part of which was provided with a government guarantee by means of the earmarked funds—met the need

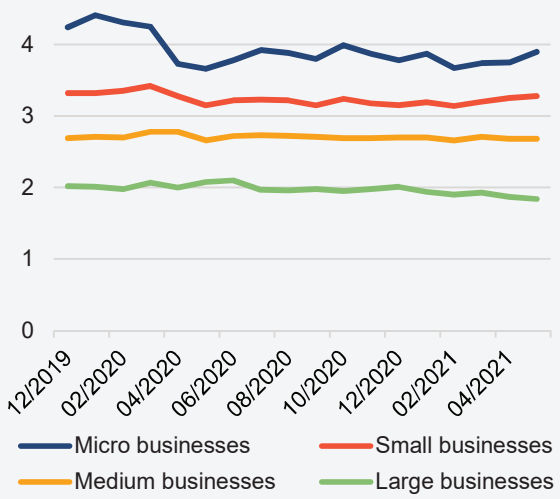
for credit among businesses during the contraction in activity that accompanied the lockdowns and this allowed businesses to smooth over the effect of the crisis. During March and April of 2021, there was a significant increase in new credit to the business sector which was manifested in an increase in the quantity of credit, primarily to large businesses, while the quantity of credit to small and medium-sized businesses remained stable (Figure 26). The average interest rate on new loans to large and medium-sized businesses during the first half of 2021 was similar to the pre-crisis levels and this situation was maintained throughout the crisis. In contrast, the average interest rate for small and micro businesses during the crisis was lower than prior to the crisis and reflected the effect of the government-guaranteed funds and the Bank of Israel program to extend loans to the banks for the purpose of providing credit to small businesses.[32] The interest rate on new credit to small and micro businesses is still lower than prior to the crisis, although in recent months it has risen (Figure 27). This increase is evidence of growth in the proportion of credit provided without a government guarantee and implies that this credit is not being utilized by businesses in distress but rather for the purpose of expanding activity. Nonetheless, we note that the banks are continuing to use the Bank of Israel program in order to provide credit to the business sector. Thus, the level of credit they received as part of this program grew by NIS 17.6 billion during the first half of 2021 to a total of NIS 37.2 billion.

Figure 26
Distribution of Bank Credit to the Business Sector by Business Size*, 2018–2021:Q1
(quarterly data, NIS billion)



* Distribution by supervisory activity segments.
SOURCE: Reports to the Banking Supervision Department.

Figure 27
Interest Rates on New Credit Issued in the Unindexed Track, by Business Size*, December 2019–May 2021
(monthly data, percent)



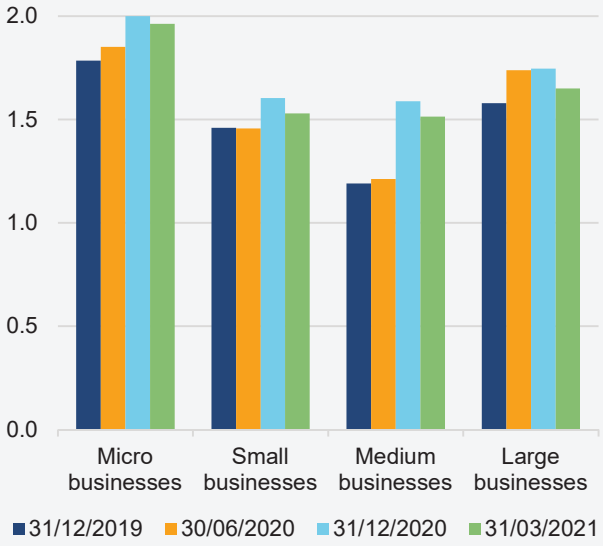
* Distribution by administrative activity segments.
SOURCE: Reports to the Banking Supervision Department.

[32] The first layer of the program provided the banks with three-year loans at an interest rate of 0.1 percent. In December 2020, the Bank of Israel began implementing the second layer of the program, which provided four-year loans to the banks at a fixed interest rate of -0.1 percent, on the condition that the interest rate on loans to small businesses would not exceed prime plus 1.3 percent. The program of loans to the banking system will end on October 1st, 2021 or when the scope of loans provided by the Bank reaches NIS 40 billion.

The deferral of loan payments by the business sector – In April 2020, the Bank of Israel announced a comprehensive framework for the deferral of loan payments for a period of up to six months in order to assist the banks' customers in coping with the effects of the COVID-19 crisis, and the banking system adopted the plan. Essentially, the banks began to allow the deferral of loan payments even before the announcement. In view of the recovery in economic activity, the proportion of bank credit on which payments are being deferred has declined rapidly. Payments have been renewed on the vast majority of loans for whom the period of deferral has ended. The banks are reporting that only a small proportion of the loans for which the deferral period has ended are in arrears. Those customers who are having difficulty in resuming the servicing of their debt are primarily micro businesses, among which the share is 1.84 percent. The rate of non-payment in this sector is also relatively high in routine times.

The share of impaired debt rose already during the first quarter of 2020 and remained close to that level during the course of the year (Figure 28). During the first quarter of 2021, the banks reduced the share of impaired debt, particularly among the micro to medium-sized businesses. This was also reflected in the banks' credit loss allowances (see the chapter on the banking system). This implies that the main increase in the allowances was carried out by the banks already at the beginning of the health crisis. The share of impaired debt grew during 2020 among businesses in industries in which activity was particularly affected by the COVID-19 crisis, namely business services, transportation and storage and accommodation and food. There was a marked increase in the risk of these industries, but the credit to all of them combined accounts for only about 14 percent of total bank credit to the business sector. In contrast, the share of impaired debt in the construction and real estate, trade, manufacturing and financial services industries declined during 2020, apparently against the background of less expensive options for debt refinancing, government assistance, and an expectation of improvement in economic activity in 2021.

Figure 28
Rate of Impaired Debts, by Business Size*, 2019–2021:Q1 (quarterly data, percent)



* Distribution by supervisory activity segments.
SOURCE: Based on published financial statements and reports to the Banking Supervision Department.

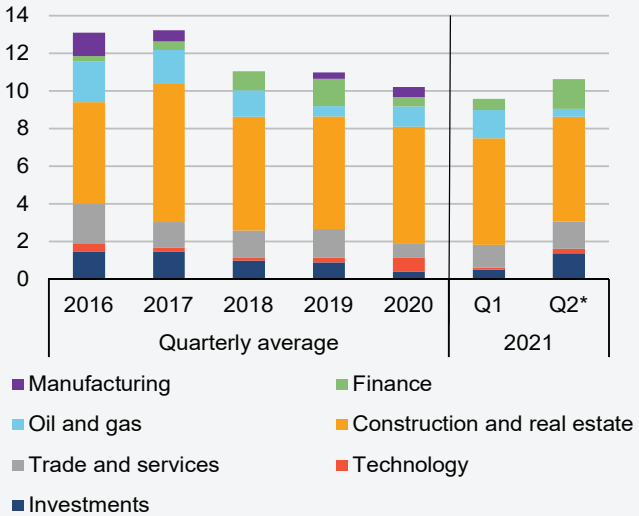
Since the beginning of the limitations, which were intended to halt the spread of the COVID-19 virus, part of the business sector has essentially been at a standstill. Some of the current expenses and debt payments have been frozen, partly on the basis of government directives and partly on the basis of agreements between businesses or between businesses and credit providers, such as the deferral of loan payments allowed by the banks. However, now that most of the restrictions have been lifted and there is less concern about an additional wave of infection, the justification for across-the-board suspension of payments will no longer be valid. Businesses that will not show an improvement in their situation after the restrictions are lifted and most of the government benefits have ended will have a high risk of default.

Nonbank credit

Nonbank credit to the business sector is composed of credit from financial institutions (about 41 percent), from foreign residents (34 percent) and from households in the form of corporate bonds held directly or indirectly (25 percent). At the beginning of the COVID-19 crisis, there was a significant decline in credit from the financial institutions, although already during the second half of 2020 it began to recover, primarily by way of the purchase of corporate bonds by the financial institutions. It can be assumed that contributing to this were regulatory exemptions instituted by the Capital Market Authority at the onset of the crisis and in particular the exemption from the obligation to carry out an analysis according to the "Hodak regulation" rules before purchasing bonds. At the end of 2020, there was also a visible recovery in loans provided by the financial institutions directly to businesses. The preference of the financial institutions to acquire negotiable debt during a period of uncertainty is in line with financial theory, according to which, companies that are stronger and more secure will prefer to issue negotiable debt over private debt. In addition, the trading that takes place in the bond market makes it possible to obtain more reliable information on the market beliefs regarding default risk than the issue of private debt and such information is particularly important during periods of uncertainty.

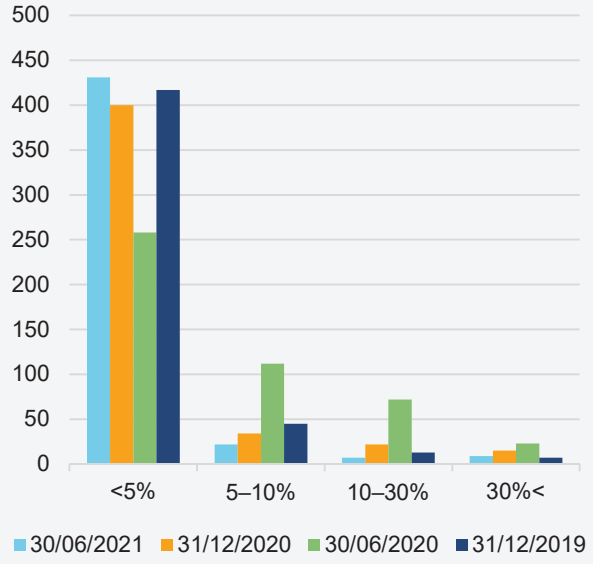
The decline in loans from foreign residents leveled off at a stable level only in the last quarter of 2020. In contrast, many companies successfully issued bonds abroad, such that overall the total credit to the business sector from this source grew during 2020 by 36 percent. The increase in the scope of bonds that Israeli companies issued abroad is in contrast to the trend in the domestic bond market where issues during 2020 were lower than in previous years and the data for early 2021 point to a slow pace of issuing relative to previous years (Figure 29). The main issues were by companies in real estate and in oil and gas, as in previous years. Technology companies issued a relatively large amount of debt in 2020 in comparison to previous years. It may be that these issues were to a certain extent meant to replace debt from abroad.

Figure 29
Real Sector Bond Issuances by Industry, First Two Quarters of 2021 Compared with Quarterly Averages for 2016–2020
(NIS billion)



* Data for April and May were multiplied by 1.5 to adjust to the quarterly data.
SOURCE: Based on Tel Aviv Stock Exchange.

Figure 30
Number of Bonds in Each Yield Spread Group, Final Date of the Half-Year, 2019:H2–2021:H1



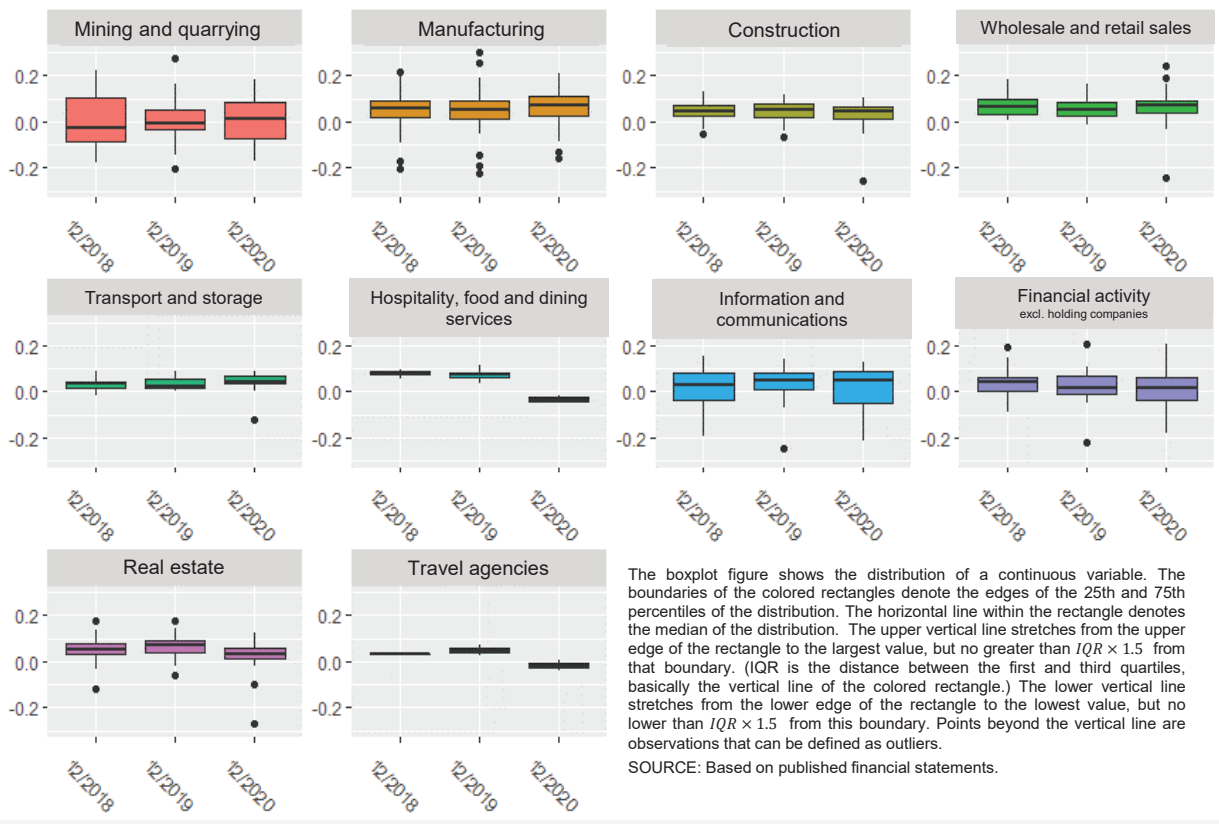
SOURCE: Based on Tel Aviv Stock Exchange.

The yield spreads on corporate bonds have declined significantly since the height of the crisis in March 2020 and in most industries the spreads have reached pre-crisis levels. The vast majority of the bonds in the market are trading at low yields (Figure 30). The characteristics of issues during 2020 and at the beginning of 2021 show that the increase in spreads has not affected the quality of the issues. The distribution of ratings, the use of collateral and term-to-maturity remain similar on average to their levels in 2019, which implies that the issuing companies have not improved the quality of protection for investors.

The business sector analyzed on the basis of public companies

The majority of the economy's industries are represented among public companies. Therefore, an analysis of public companies—for which there is abundant and transparent information—can improve our understanding of the situation of the business sector. At the same time, public companies do not fully represent the business sector since they are generally bigger than the average size company. Neither is their distribution by industry representative of the entire business sector. With respect to employment, public companies do not include companies in the domains of government services (education and medical) and local administration, which are some of the largest employers in the economy. In contrast, there is overrepresentation of the real estate industry. An examination of public companies' profitability, as measured by the ratio of operating profit to total assets, shows that many of the industries, and in particular manufacturing, trade, and information and communication, did not experience any decline in profitability during 2020 (Figure 31). In contrast, the largest declines in profitability were among companies in accommodation and among travel agencies and to a lesser extent real estate companies and financial companies.

Figure 31
Operating Profit Rate of Public Companies, by Industry, 2018–2020 (annual data)



The boxplot figure shows the distribution of a continuous variable. The boundaries of the colored rectangles denote the edges of the 25th and 75th percentiles of the distribution. The horizontal line within the rectangle denotes the median of the distribution. The upper vertical line stretches from the upper edge of the rectangle to the largest value, but no greater than $IQR \times 1.5$ from that boundary. (IQR is the distance between the first and third quartiles, basically the vertical line of the colored rectangle.) The lower vertical line stretches from the lower edge of the rectangle to the lowest value, but no lower than $IQR \times 1.5$ from this boundary. Points beyond the vertical line are observations that can be defined as outliers.

SOURCE: Based on published financial statements.

The increase in leverage was greatest among tourism companies and there was increased leverage also among oil and gas exploration companies (Figure 32). For the purposes of the analysis, leverage was defined as the ratio of financial debt (loans and bonds) to total assets.

The debt sources varied across industries. Among real estate companies and gas companies there was low reliance on bank credit while manufacturing and trade companies did rely on bank credit to a significant extent. During the COVID-19 crisis, there was an increase in the proportion of financing by means of bonds among communication and technology companies. In contrast, among financial companies, such as nonbank credit providers, the proportion of equity finance increased.

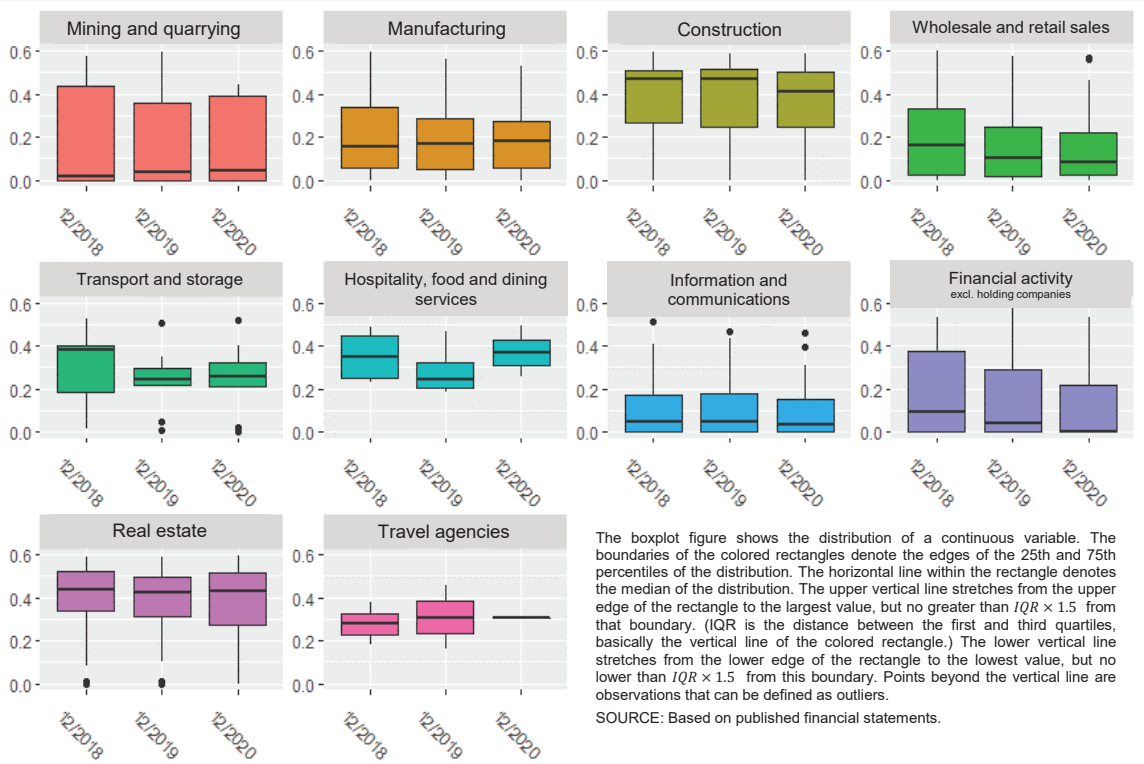
The next parameter examined was liquidity, which showed that in most industries, liquidity improved relative to the previous year, including companies particularly affected by the crisis (Figure 33). Thus, the increase in the leverage rate in the accommodation industry and among travel agencies, served to a large extent as a cautious tool, rather than being the result of a shortage of liquidity.

Although the data on profitability and liquidity present a stable picture for the most part, the decline in bond yields since the peak of the crisis is in contrast to the less than impressive performance in the equity market. Only in November 2020 did the stock market indices begin to rise again and this represented a lag behind foreign stock markets. Weighting the market value of public companies with other information, such as leverage, and the historical performance of the share by means of a structural model for estimating default risk (Merton, 1974)[33], shows that default risk among public companies, according to the market's assessments, declined significantly starting from the beginning of 2021 (Figure 34).

The nonbank credit companies (excluding credit card companies)— about 13 companies involved in providing credit to the business sector, generally to small businesses—are traded on the Tel Aviv Stock Exchange. The credit provided by these companies to the business sector is small in size relative to the total credit provided to the business sector; however, these companies serve a particular segment of businesses, which does not have access to the capital market, and it may be that some of them are riskier than the businesses that are using bank credit. These credit providers claimed that they had difficulty obtaining financing for their activity during the crisis and as a result they also reduced the size of their credit portfolio (for further details, see page 33 of the Financial Stability Report for the second half of 2020). The total assets of the non-institutional credit companies declined by approximately 3 percent from the end of 2019 until the first quarter of 2021. The difficulty experienced by these companies in obtaining financing was apparently related to bond financing, since their bank debt grew significantly in 2020, at the expense of their nonbank debt.

[33] This model is calculated at the Bank of Israel and is based on a 1974 article by Merton: "On the Pricing of Corporate Debt: The Risk Structure of Interest Rates", Journal of Finance 29:449-70. For further details of the modifications made to the model by the Bank of Israel, see the Bank's discussion paper by Ana Brodesky, Assessing Default Risk of Israeli Companies Using a Structural Model, 2011.

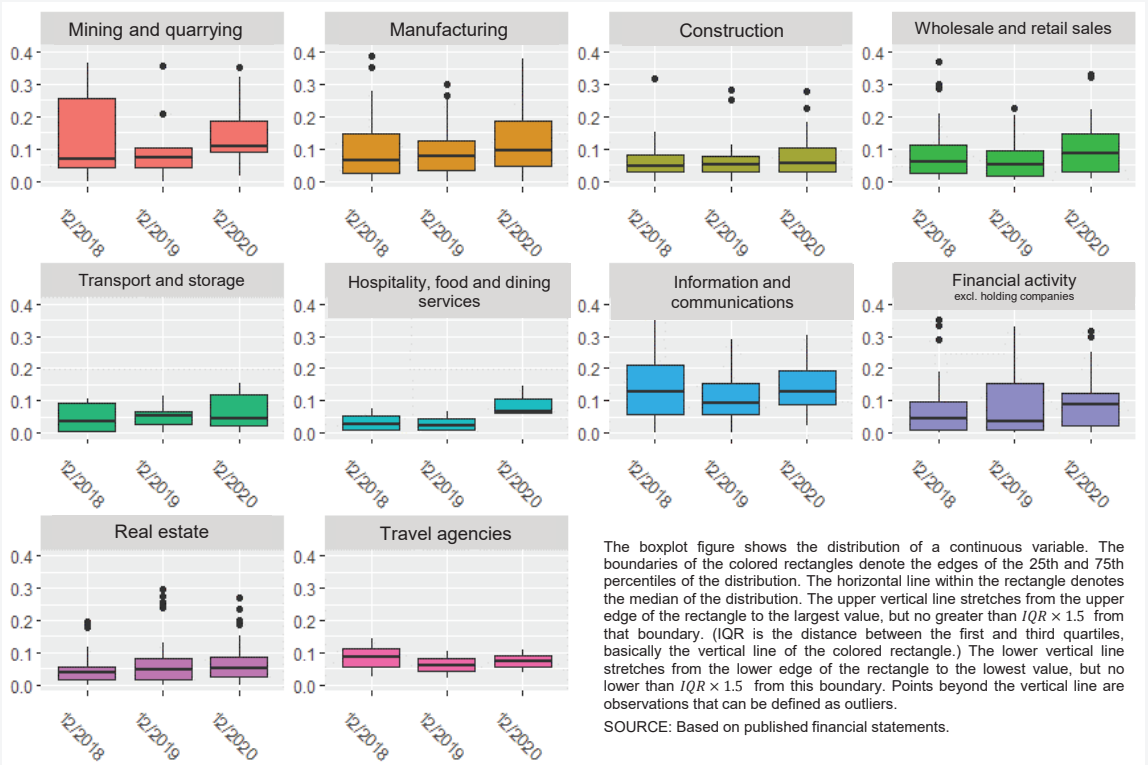
Figure 32
Leverage Rate of Public Companies, by Industry, 2018–2020 (annual data)



The boxplot figure shows the distribution of a continuous variable. The boundaries of the colored rectangles denote the edges of the 25th and 75th percentiles of the distribution. The horizontal line within the rectangle denotes the median of the distribution. The upper vertical line stretches from the upper edge of the rectangle to the largest value, but no greater than $IQR \times 1.5$ from that boundary. (IQR is the distance between the first and third quartiles, basically the vertical line of the colored rectangle.) The lower vertical line stretches from the lower edge of the rectangle to the lowest value, but no lower than $IQR \times 1.5$ from this boundary. Points beyond the vertical line are observations that can be defined as outliers.

SOURCE: Based on published financial statements.

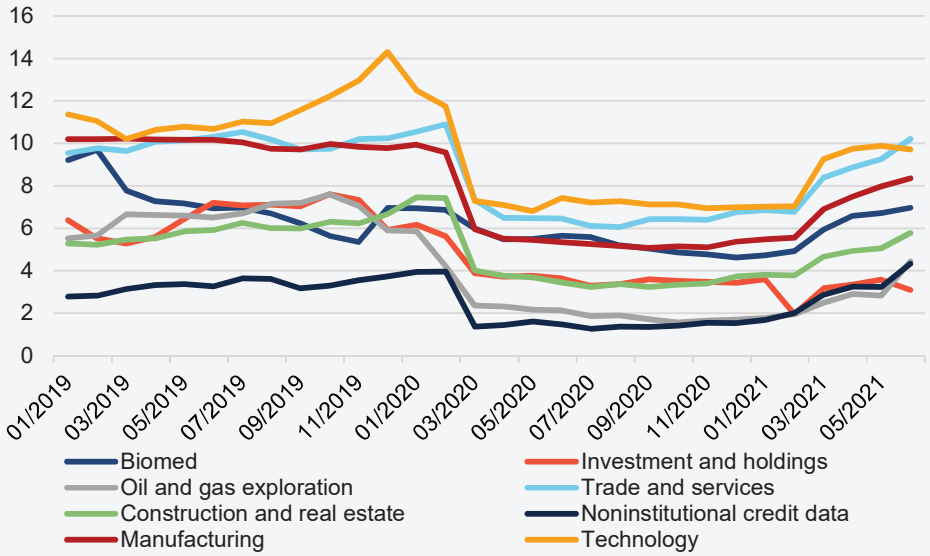
Figure 33
Rate of Liquid Assets of Public Companies, by Industry, 2018–2020 (annual data)



The boxplot figure shows the distribution of a continuous variable. The boundaries of the colored rectangles denote the edges of the 25th and 75th percentiles of the distribution. The horizontal line within the rectangle denotes the median of the distribution. The upper vertical line stretches from the upper edge of the rectangle to the largest value, but no greater than $IQR \times 1.5$ from that boundary. (IQR is the distance between the first and third quartiles, basically the vertical line of the colored rectangle.) The lower vertical line stretches from the lower edge of the rectangle to the lowest value, but no lower than $IQR \times 1.5$ from this boundary. Points beyond the vertical line are observations that can be defined as outliers.

SOURCE: Based on published financial statements.

Figure 34
Public Companies' Distance from Default in Standard Deviation Terms, 2019–June 2021 (monthly industry average)



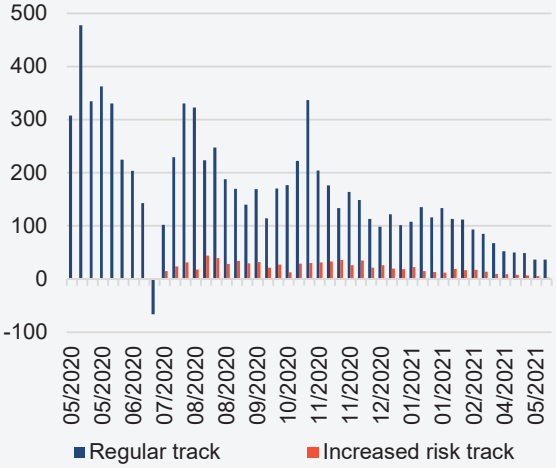
* Based on the Merton model (1974).
SOURCE: Based on financial statements and the Tel Aviv Stock Exchange.

As part of the expansion in the array of monetary tools, the Bank of Israel announced in December 2020 that it would allow the execution of repo transactions with supervised nonbank credit providers, on the condition that they provide credit to small and micro businesses;[34] however, no such transactions have yet taken place.

Government-guaranteed loans to the business sector

In response to the COVID-19 crisis, the government established guaranteed loan funds in the amount of about NIS 46 billion, which represents about 5 percent of the total credit to the business sector. The main credit provider of these funds is the banking system. The largest fund in this framework is the Regular Track Fund for Small and Medium-Sized Businesses, which reached maximum utilization at the end of September (NIS 18 billion), and was expanded by that amount at the beginning of October. At the end of June, the government set up the Fund for Small Businesses at Heightened Risk with total funding of NIS 4 billion, aimed at small businesses but with larger government guarantees, and the Fund for Large Companies, at NIS 6 billion. The utilization rates stand at somewhat more than one-half for the funds targeted at small businesses (the

Figure 35
Daily Change in the Number of Requests for Loans from the State-Backed Funds, May 2020–June 2021 (monthly average)



* In July 2020, the funds opened to large businesses, so the figure for that month is negative.
SOURCE: Reports to the Banking Supervision Department.

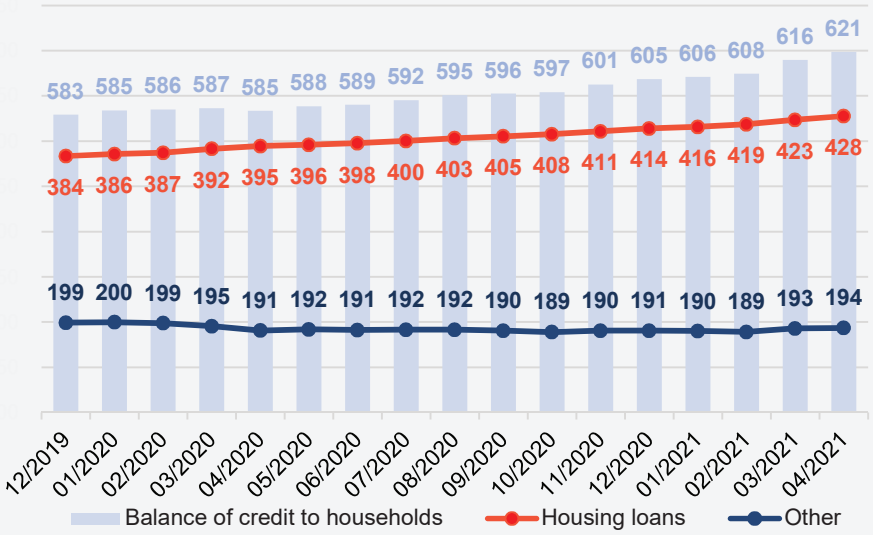
[34] The interest rate in the repo transactions will be set at 0.1 percent and, subject to the credit being provided to small and micro businesses at an interest rate of up to Prime + 1.3 percent, the interest rate will be at a fixed rate of -0.1 percent.

regular track and the heightened risk track) and less than one-third for the Fund for Large Companies. The highest rate of loan request approvals (80 percent) was in the Fund for Heightened Risk Businesses. In the two other funds, the rate of request approval was lower, at about 60 percent. The volume of requests to these funds has declined in recent months (Figure 35), implying that most of the demand for credit among businesses who meet the criteria has been met.

2.3.2 The household sector

During the COVID-19 period, housing credit to households grew while nonhousing credit declined markedly, by a rate of about 5 percent (Figure 36).

Figure 36
Balance of Housing and Other Credit to Households, January 2020–April 2021 (NIS million)



SOURCE: Based on reports to the Bank of Israel from financial institutions and businesses, data from financial statements, and the Tel Aviv Stock Exchange.

Borrowers in the household sector, as in the business sector, were given the opportunity to defer loan payments. In the case of housing credit, a high proportion of payments was deferred, in contrast to a lower proportion in nonhousing credit. Here, too, the proportion of loans with payments being deferred has recently declined to a significant extent (Figure 37). Data from online surveys, which were carried out in August and December 2020[35], indicate that the population of borrowers that took advantage of the option of deferring loan payments were characterized by relatively high risk indices even before the health crisis. In other words, the risk population has not grown, but rather its risk has been realized to some extent. The possibility of deferring payments enables the population whose income has fallen during the crisis to "smooth out" their decline in consumption. The proportion of debt for which the period of deferral has ended but which went into arrears subsequently is 0.31 percent for housing credit and 0.11 percent for nonhousing credit. In general, nonhousing credit is considered to

[35] Haran Rosen and Laufer, Characteristics of borrowers who deferred payments on bank loans as a result of the COVID-19 pandemic, forthcoming. [Hebrew]

be riskier than housing credit. It may be that households preferred to service their nonhousing debt and to request a deferral of their housing debt, since deferral of long-term debt, which was provided on the basis of collateral (their home) at relatively low interest rates, is more worthwhile.

Figure 37
Deferred Debt as a Share of Outstanding Credit, by Credit Purpose, Selected Dates
(percent)

Balance of deferred credit as of May 31, 2021, including all banks, and does not include consolidated companies. Total balance of credit from which the deferral rate is calculated as of March 31, 2021, including the entire banking system, including consolidated companies.

SOURCE: Based on reports to the Banking Supervision Department.

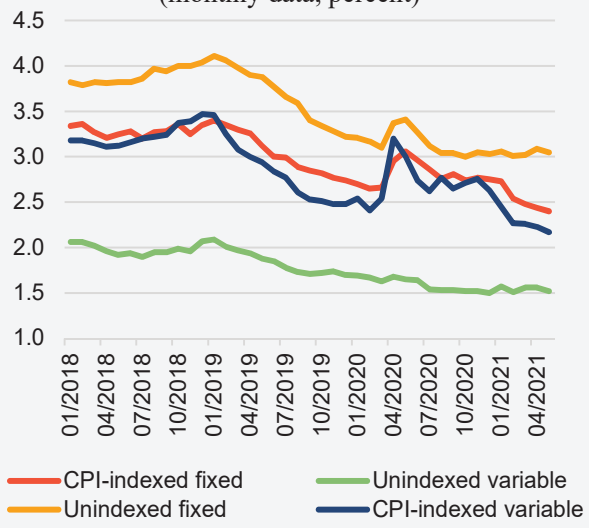
Housing credit

The increase in the number of transactions in the housing market was reflected in a significant rise in new mortgages in recent months. The recent increase in the number of transactions is due to an increase in home purchases by homeowners moving to a different home and investors, and a decline in the number of first-time buyers. These trends are consistent with the analysis of the labor market, which indicates a larger adverse impact of COVID-19 on the young age group, in parallel to the termination of the Buyer's Price program and also the tax leniency granted to investors.

With the onset of the COVID-19 crisis, the number of mortgages increased, and then there was a steep decline in the number of new mortgages during the first lockdown, apparently due to the physical limitations on activity in the housing market. New mortgage volume recovered in the summer of 2020 and returned to its pre-crisis level. Since the end of 2020 there has been a significant increase in new mortgages. Thus, during the previous 12 months (as of May 2021), new mortgages totaled NIS 87 billion, which is 20 percent more than during the 12 months preceding May 2020. The average size of a new mortgage rose during the first lockdown and it remained high and even increased in recent months. Overall, the average new mortgage increased by 24 percent from the end of 2019 until May 2021. In parallel, there was an increase in the risk parameters of those taking out new mortgages. Thus, a greater proportion of new mortgage borrowers had high loan-to-value ratios; this trend began in 2017 and included an increase in the proportion of mortgage borrowers with a loan-to-value ratio of more than 60 percent, which is considered to be high. It is also worth noting that the existing restriction on the loan-to-value ratio for first-time home buyers[36] in Israel (75 percent) is more stringent than in most of the advanced economies, and in addition, the ratio of housing debt to GDP is lower than in other countries. Finally, the term to maturity of an unindexed fixed-rate mortgage has recently increased. In view of the increase in the average size of a mortgage, the share of mortgages with a payment to income ratio of more than 30 percent increased during 2020 and has remained stable since the start of 2021. This is apparently due to the decline in interest rates on the CPI-indexed track (Figure 38) and the cancelation of the restriction that a maximum of one-third of a mortgage be based on the prime interest rate, which have enabled borrowers to obtain larger mortgages than previously without increasing their monthly payments.

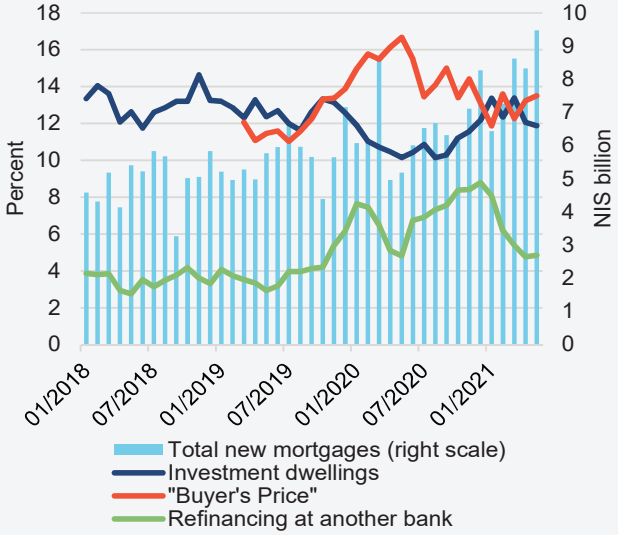
[36] First-time home buyers in the Buyer's Price program can take advantage of an exemption from this restriction such that the calculation of the loan-to-value ratio is based on the market value of the home rather than the actual price, subject to a maximal home price.

Figure 38
Interest Rate on New Mortgages Issued During the Month, by Indexation Type and Interest Type, 2018 –May 2021
(monthly data, percent)



SOURCE: Reports to the Banking Supervision Department.

Figure 39
New Mortgages Taken Out, by Purpose, as a Share of Total new Mortgages, and Total New Mortgages Taken Out, January 2018 –May 2021 (monthly data)



SOURCE: Reports to the Banking Supervision Department.

Due to the increase in mortgage interest rates during the first lockdown, home buyers were forced to choose longer terms for their mortgages, which was particularly the case for fixed-rate unindexed mortgages, in which the average term rose by more than one year. However, the average term remained long during the course of the year. At first, the increase in average mortgage size was the result of a change in the composition of borrowers and in particular the exit from the market of investors, who tend to buy less expensive apartments (Figure 39). The continuing rise in mortgage size during the second half of 2020 and into 2021 was supported by both the easing of the regulatory restriction on the prime-interest component of mortgages—namely an increase from one-third to two-thirds which makes it possible to obtain a larger mortgage without increasing monthly payments—and the drop in mortgage interest rates on the indexed tracks, in view of the lower indexed interest rate on bonds issued by the banks.

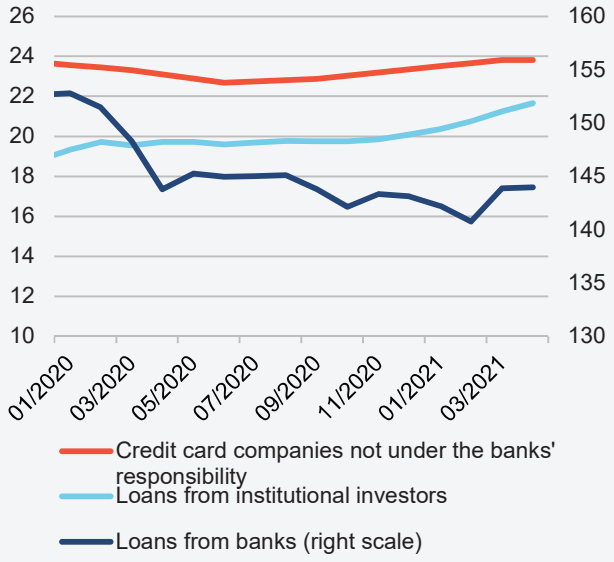
Nonhousing credit

In contrast to housing credit, nonhousing credit, and in particular from the banks, declined by 7 percent during 2020. Credit from nonbank sources remained stable although it has a low share in total credit (Figure 40).

There was a decline in total bank credit against the background of a significant decline in new credit provided to households. The term to maturity of this credit increased, alongside a decrease in the interest rate that is added to the anchor interest rate, which remained stable (Figure 41). These trends point to a possible decrease in demand for this type of credit.

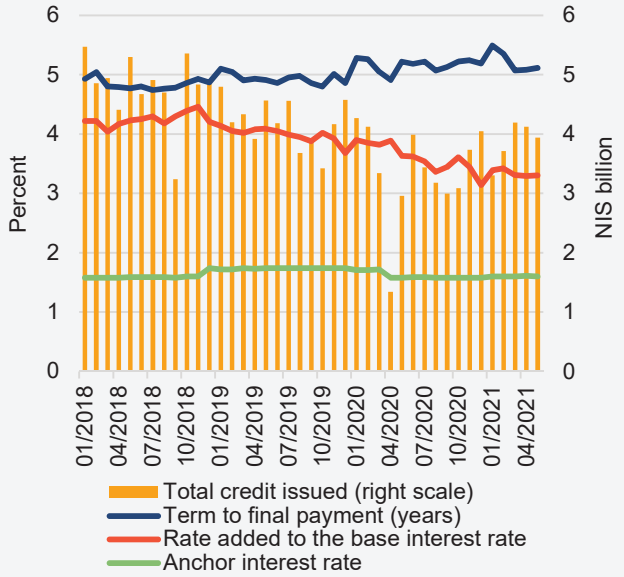
The proportion of impaired debt within nonhousing household debt rose in both bank credit and credit card company credit during 2020 (Figure 42 and 43). In particular, there was an increase in the proportion of impaired debt within credit card loans during the last quarter of 2020. The proportion of impaired debt within credit card credit is relatively high even in normal periods and is an indication of the higher risk of borrowers in this channel, which accounts for about two-thirds of the credit provided by credit card companies to households. There was a

Figure 40
Nonhousing Credit by Source, 2017–April 2021 (monthly data, NIS billion)



SOURCE: Based on reports to the Bank of Israel from the financial institutions and from businesses, data from financial statements, and the Tel Aviv Stock Exchange.

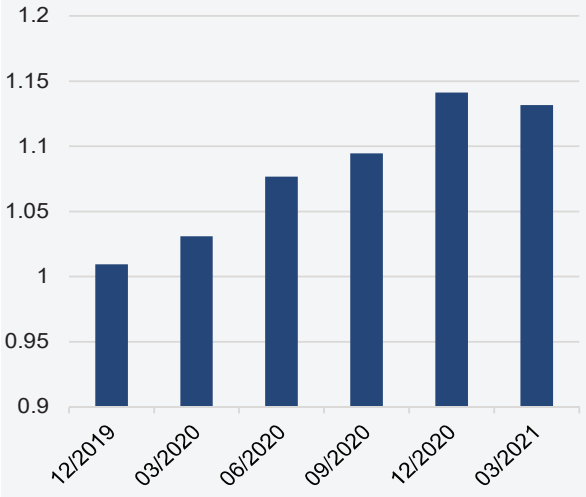
Figure 41
Characteristics of Bank-Issued Unindexed Variable Rate Nonhousing Credit to Households, 2018 –May 2021 (monthly data)



SOURCE: Reports to the Banking Supervision Department.

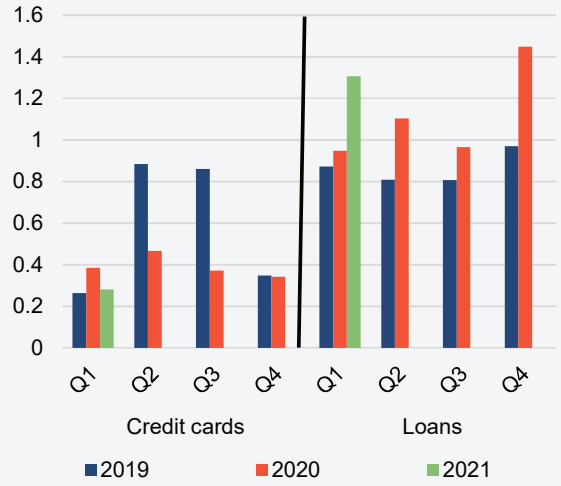
drop in the share of impaired debt in the case of credit to households both from the banks and from the credit card companies during the first quarter of 2021. This trend is in line with that observed in the credit loss allowances of both the banks and the credit card companies (for further details, see the chapter on the Resilience of the Large Financial Institutions—The Banking System).

Figure 42
Impaired Debts as a Share of Nonhousing Bank Credit, 2019–2021:Q1
(quarterly data, percent)



SOURCE: Based on published financial statements and reports to the Banking Supervision Department.

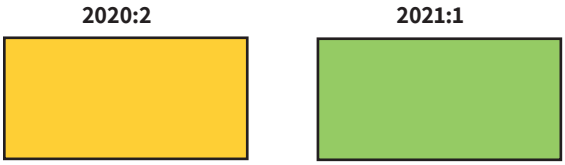
Figure 43
Impaired Debts as a Share of Credit from the Credit Card Companies 2019–2021:Q1 (quarterly data, percent)



SOURCE: Based on reports to the Banking Supervision Department.

3. Resilience of the large financial institutions

The large financial institutions: the banks and the insurance companies



Although the COVID-19 crisis had an adverse effect on the activity of the financial institutions in Israel, their level of resilience remained high, and after the initial shock they experienced at the start of the crisis, they returned to profitability and renewed growth toward the end of 2020. It therefore appears that even though the chances of a decline in profitability are higher than prior to the COVID-19 crisis, uncertainty has declined significantly and with it the threat to the stability of the financial institutions. Therefore, risk has returned to its pre-crisis level despite the higher likelihood of reduced profitability among the financial institutions.

The sound situation of the banking system with the onset of the crisis was reflected in its adequate capital and liquidity ratios and also in its high-quality and diversified portfolio. The upgrading and improvement of digital services and products in recent years, following the adaptation of the business model to technological innovations in the markets, has enabled the banking system to maintain its resilience and to continue to fulfill its function as a primary financial intermediary during the crisis. The banking system continued to expand its supply of credit to households and the business sector and despite the social distancing restrictions the banks continued to provide banking services during the crisis by means of various digital and online channels.

Although the economic consequences of the COVID-19 crisis no longer represent a systemic risk, their full extent is still not completely clear. For example: payments have not been renewed on some of the loans for which payments were deferred (as described at length in the Banking Supervision Department's "Israel's Banking System—Annual Survey for 2020", Box 1.1); the providing of loans from the government-guaranteed funds is continuing although at a diminishing pace; and most of the loan-loss provisions during the crisis are due to group provisions, which reflects the banks' fear of a failure by borrowers whose exact identity is currently unknown. A significant increase in economic activity alongside a decline in uncertainty in the economy due to the vaccination of the population and the decline in morbidity have had a positive effect on the business activity and results of the Israeli banking system in 2021. Thus, the return on capital in the first quarter of 2021 was about 14.5 percent (compared to about 2.4 percent in the same quarter of 2020), which is its highest level since 2007. Accordingly, the Tier I Capital ratio has also improved and was estimated to be 11.2 percent in the first quarter of the year. The liquidity coverage ratio also improved and was calculated to be about 139 percent.

Toward the end of 2020, with the exit from the crisis, most of the insurance companies had high profitability relative to previous years and this was also true for the first quarter of 2021. This was also the result of an improvement in the performance of the companies with the exit from the crisis. The median solvency ratio, which is the principal measure of the insurance companies' stability without the exemptions provided by the temporary directives, stood at 116 percent at the end of 2020, which exceeds the regulatory threshold.

The COVID-19 crisis led to an acceleration in the use of digital platforms in many types of activity. This transition led to an improvement in the performance of the companies and a decline in operting expenses, although it also involved challenges. First, the transition to digital activity is part of a broader trend that includes the entry of new digital players into the market, which may lead to a destabilization of the existing market and a change in the way the public consumes financial services. The change in the banking market is already evident today. Thus in

December 2019, for the first time, a license was granted for a digital bank in Israel. There are already a number of digital insurance companies, but in 2020, for the first time one of these companies reported achieving profitability (until that time the companies did not make any profit, or even experienced losses). One Israeli company even issued shares on the TASE at the beginning of 2021. Currently, it appears that the large financial companies are aware of the risks and are working to maintain their relevance in the future as well, although their business results need to be monitored over time, as competition with the digital companies develops.
The transition to the digital world also involves cyber risk and at the end of 2020 one of the insurance companies in Israel experienced a major cyber attack. Although the attack did not affect the company's stability or that of the market, it provided evidence that this type of risk has increased.

3.1 The banking system

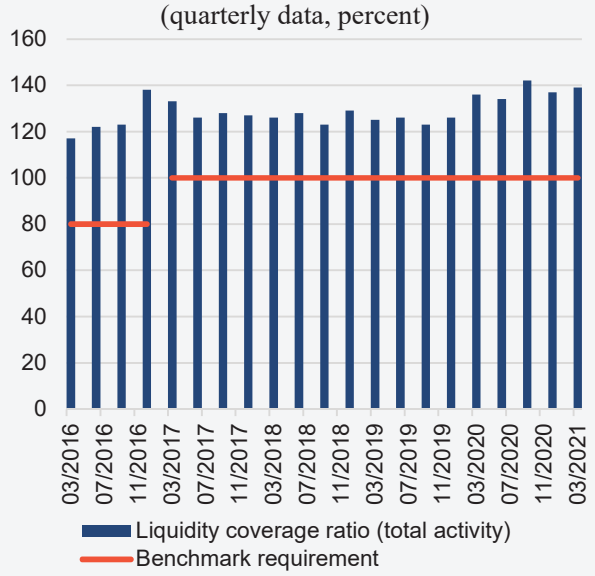
The year 2020 was a particularly challenging one for the banking system **due to the economic fallout from the COVID-19 pandemic in Israel (as in the rest of the world). Nonetheless, the banking system managed to maintain its resilience and stability. At the end of the first quarter of 2021, there was a decline in rates of infection, and with it a significant increase in economic activity. Therefore, uncertainty in the economy declined and the performance of the banking system was also positively affected in this quarter.**
Among the main factors explaining the stability of the banking system during the COVID-19 crisis is the solid starting point of the banks at the beginning of the crisis. This is due to, among other things, a series of measures initiated by the Bank of Israel over the years, including the application of insights achieved during the financial crisis of 2008, in addition to steps taken by the Bank of Israel and its Banking Supervision Department during the COVID-19 crisis. These enabled the banking system to assist the public and to reduce the adverse impact to households and businesses and thus prevent a worsening of the macroeconomic crisis.[37] These measures were intended to, among other things, support the supply of credit in the economy during the crisis and primarily included the following: (1) An easing of capital requirements during the crisis—this allowed the banks to continue expanding the supply of credit even in quarters in which they had to cope with a drop in the capital ratio due to the large losses they experienced. These losses were due to the increased credit loss provisions and the price declines in the capital market. This countercyclical trend was, as mentioned, intended to allow the banks to continue providing credit despite their lower profitability. (2) The amendment of the directives for reporting to the public regarding the accounting treatment of troubled debt restructuring. (3) Schemes for the deferral of loan payments by households and small businesses, which enabled the banks to ease the situation of borrowers affected by the crisis.[38] (4) Monetary loans provided by the Bank of Israel to the banks for the purpose of providing credit to small and micro businesses. In parallel, the Ministry of Finance established government-guaranteed funds for businesses and for high-risk businesses. These made it possible for the banks to provide credit also to businesses that had been adversely affected by the crisis and when the risk involved in providing them with credit exceeded that derived from the banks' risk appetite. This increased the supply of credit even further and channeled it to customers who were adversely affected by the crisis. (5) The intervention of the Bank of Israel in the foreign exchange market following the dollar liquidity shortage in the initial days of the crisis. This was accomplished by facilitating repo transactions with the Israeli banks in order to provide them with the dollar liquidity that they needed.

[37] For further details on the measures from an international perspective, see Israel's Banking System—Annual Survey 2020, Box 3.4.

[38] For further details, see Israel's Banking System—Annual Survey 2020, Box 1.1.

The crisis, the eventual effect of which on the economy was unclear at the outset, had an immediate and pronounced effect on the conduct of the banks' customers in all of the sectors and on that of the banks themselves. During the first stage, there was a clear preference on the part of the active players both in Israel and abroad for safe, liquid and stable assets. This was reflected in a shift of funds from direct and indirect investment in securities to bank deposits. In addition, business customers exploited credit lines that were made available to them prior to the crisis and deposited these funds in bank deposits. The aforementioned contributed to an increase in liquidity among the banks. Thus, the liquidity coverage ratio (LCR)[39], which prior to the crisis (in December 2019) was about 125 percent, rose already in March 2020 to 133 percent and subsequently even continued to rise (Figure 44).

Figure 44
Liquidity Coverage Ratio, Total Banking System, March 2016–March 2021
(quarterly data, percent)



SOURCE: Based on published financial statements.

These trends, and in particular the shocks to the markets and the utilization of credit lines, alongside the large allowances for credit losses set aside by the banks at the onset of the crisis, led to a rapid erosion of the banks' capital ratios. After the sharp decline in the capital ratio during the first quarter of 2020, a trend of recovery in the ratio began already in the second quarter and by the end of 2020 the Tier I Capital ratio for the system was similar to its level in 2019, prior the crisis. The main contribution to the increase in capital during the year originated from the accumulation of profit recorded by the banking system, which had risen gradually since the second quarter of the year. The accumulation of capital was also due to the dividend nondistribution policy.[40] The Tier I Capital ratio did not decline below the minimal requirement for any of the banks, even before exemptions were put in place.

Throughout 2020, and against the background of the COVID-19 crisis, there were a number of exceptional developments in the banks' balance sheets. On the liabilities side, there was a sharp increase of about 18 percent in the public's deposits (about NIS 230 billion), in contrast to an average annual increase of 4 percent during the three years prior to the crisis. On the assets side, the banks continued to provide credit, primarily in the housing credit portfolio (which is characterized by low loss rates), alongside a contraction of the consumer credit portfolio (which is characterized by high loss rates), a trend that worked to improve the quality of the banks' portfolio of credit to households.

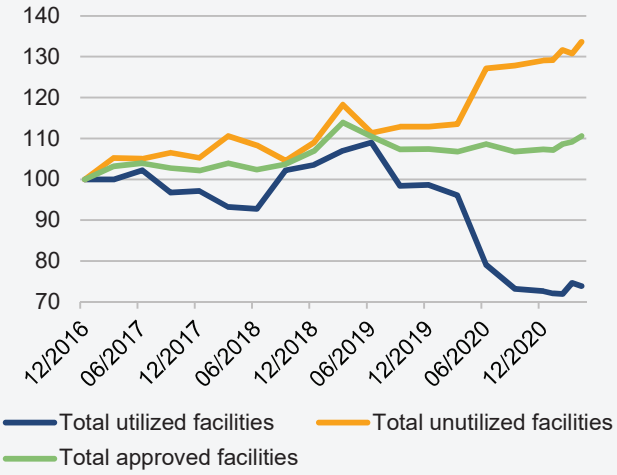
[39] The LCR, developed by the Basel Committee to enhance the short-term resilience of banking corporations' liquidity profiles, is a measure of the quantity of HQLA (High Quality Liquid Assets) that banking corporations should hold in order to withstand a significant stress scenario that lasts thirty calendar days. The LCR is composed of two elements. The first, on the numerator side, is the inventory of HQLA (High Quality Liquid Assets), comprised of two levels of assets: Level 1 includes high-quality assets that may be held in unlimited amounts, while Level 2 assets are limited to a maximum aggregate holding of 40 percent of the HQLA inventory. (This level is divided into two sublevels: 2A and 2B. At the latter level, the share of assets that may be held is limited to 15 percent.) The second element, on the denominator side, is the total net cash outflow, i.e., the expected total cash outflow less the expected total cash inflow in the stress scenario. The expected total cash outflow is calculated by multiplying the balances of different categories or types of balance-sheet and off-balance-sheet liabilities by their expected runoff or drawdown rates. The total expected cash inflow is calculated by multiplying outstanding contractual receivables by the rates at which they are expected to be received in the scenario, up to a cumulative 75 percent of the predicted total cash outflow.

[40] Apart from the dividends approved for distribution prior to the crisis, no additional dividends were distributed during the year.

The decline in consumer credit during 2020 was also reflected in off-balance sheet items. Over the course of the year the unutilized overdraft facilities and credit lines grew by 11.6 percent (about NIS 9.3 billion), which constitutes about 23.3 percent of the total increase in off-balance sheet liabilities. This development is explained by the reduction in unutilized credit lines of a similar magnitude (about NIS 9.4 billion; Figure 45). This decline was the result of, among other things, the following factors: (1) the aforementioned sharp rise in the public's deposits; and (2) an apparent increase in the public awareness of financial alternatives that are less expensive and more worthwhile than the use of credit lines. Nonetheless, about 48 percent of the reduction in the usage of credit lines according to income level was in the highest income category.[41]

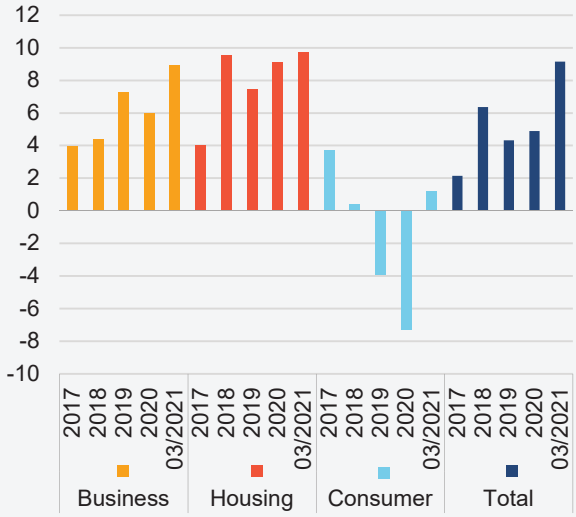
The banks' results for the first quarter of 2021 reflect optimism on the part of the banking system with respect to the economy's recovery. This optimism is also reflected in reductions in the group allowances, in view of the positive developments in the macroeconomic environment. Nonetheless, the ratio of total credit loss allowances within total credit to the public is somewhat higher than the pre-crisis level (1.4 percent in March 2021 as opposed to 1.23 percent in December 2019), since there are still channels in which the crisis is having some effect. The recovery of the economy during the first quarter of the year was also reflected in the high rate of growth in credit to the public (9.1 percent as opposed to an average annual rate of about 5.2 percent during the period 2018–20). Commercial credit (which grew by 9 percent) and in particular credit to construction and real estate and housing credit (9.7 percent) continued to lead the growth in the portfolio of credit to the public and contributed 82 percent of the total increase in total credit (Figure 46). Thus, there was an increase in the share of housing credit and credit for construction and together they constituted over one-half (about 52.5 percent) of the banks' portfolio of credit to the public in March 2021. The risk implied by the exposure to the construction and real estate industry

Figure 45
Utilized, Unutilized, and Total Approved Credit Facilities, Total Banking System, 2017–April 2021
(quarterly data, index: Dec. 31/16=100)



SOURCE: Based on reports to the Banking Supervision Department.

Figure 46
Rate of Change in Outstanding Balance-Sheet Credit, Primary Segments, December 2016–March 2021
(annual data, percent)

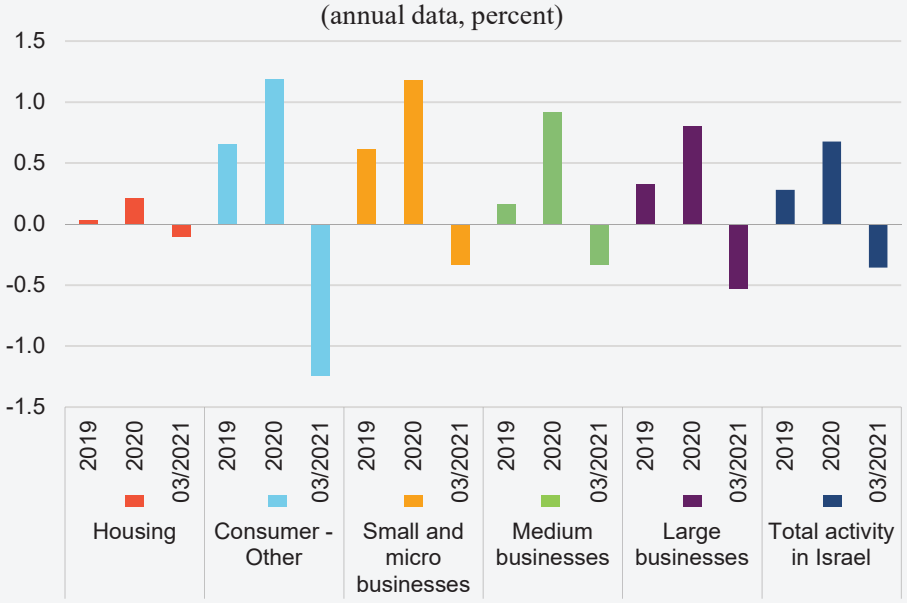


SOURCE: Based on published financial statements and reports to the Banking Supervision Department.

[41] Levels of income are categorized, according to the Reporting to the Banking Supervision Department Directive no. 836, into five categories—A to E. Category A is the highest income level and category E is the lowest. For further details, see the relevant directive.

therefore remained high and it is derived first and foremost from the total credit to the industry, its large share in the credit portfolio and also the high correlation between it and housing credit, the share of which in the total credit portfolio also increased. Nonetheless, the recovery from the COVID-19 crisis had a positive effect on the quality of the banks' credit portfolio, as can be seen from the declining proportion of loans on which payments are being deferred and the drop in loan loss provisions (Figure 47). Despite the improvement in the quality of the portfolio, the indices of credit quality have not yet returned to their pre-crisis level since there is still uncertainty as to the long-term implications of the crisis on businesses and households.

Figure 47
Loan Loss Provisions to the End of Period Balance of Credit in the Various Activity Segments, December 2019–March 2021
(annual data, percent)



SOURCE: Based on published financial statements and reports to the Banking Supervision Department.

Despite the improvement in the various economic indicators during the first quarter of the year, uncertainty is still weighing down on the economy in various domains and this is creating risk for the banking system. It is still not possible to determine whether and with what intensity the termination of unemployment benefits and of loan payment deferrals will affect the ability of borrowers to meet their liabilities and there is a fear of credit failures. As a result, the banks are, as mentioned, maintaining a high level of credit loss allowances relative to normal periods and even more so in view of the possibility of a drop in asset prices in Israel and abroad (a possibility discussed in Chapter 4.2 of this report), which will create losses for the banking system.

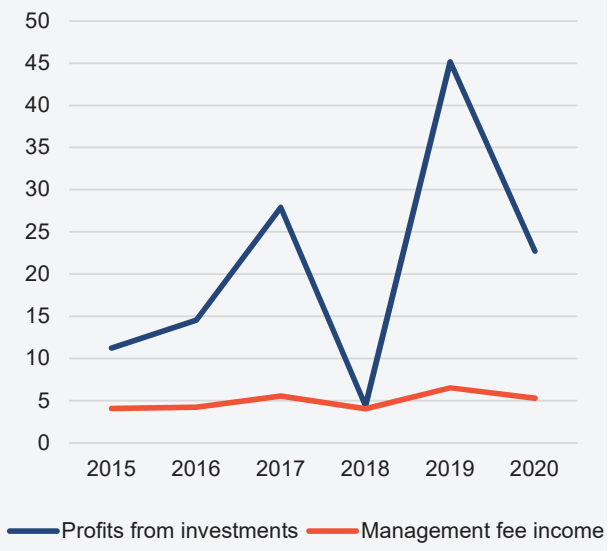
3.2 The insurance companies

In this section, we analyze the stability of the insurance companies.[42] First, we will discuss the effect of the exit from the COVID-19 crisis on the profitability of the companies. We will focus on the effect on market yields, interest rates, and collection of premiums and deposits. We will then survey the companies' solvency ratio as of the end of 2020, which is the main indicator of the insurance companies' stability. Finally, we will analyze the exposure of the insurance companies to other countries and to exchange rates, a phenomenon that has characterized all of the financial institutions in recent years and, as described in the previous Financial Stability Report, it involves risk to both markets and the insurance companies themselves.

During 2020, the five largest insurance companies reported record profits of about NIS 3 billion, a significant increase relative to 2019 (during which profitability was low due to the drop in interest rates and an increase in the life expectancy assumptions[43]). The record profitability was achieved despite the COVID-19 crisis. According to the unaudited reports of the companies, the upward trend in profitability continued during the first quarter of 2021 and the total profit of the companies during this quarter was about NIS 1.5 billion.

During the first quarter of 2020, there were price declines in the markets which led to a decrease in the profitability of the insurance companies from their investments and in their ability to charge management fees.[44] However, in the second half of 2020, there was a recovery in the markets that raised the profitability from investments and the companies again were able to collect management fees and their profits increased (Figure 48). Note that as a result of the COVID-19 crisis, the insurance companies reduced the management fees they collect on savings policies in which payments were interrupted during the COVID-19 crisis.[45] The profit from investments and the revenues from management fees were lower in 2020 than in 2019, though they were not low in historical terms. The year 2021 will apparently be a year of high profitability, since in its first quarter the profits from investments totaled NIS 17 billion.

Figure 48
Insurance Companies' Profits from Investments and Income from Management Fees, 2015–2020 (annual data, NIS billion)



SOURCE: Based on published financial statements.

[42] In the analysis, we focus on the five largest insurance companies, except in the case of investment, for which we look at all of the insurance companies in the economy without funds.

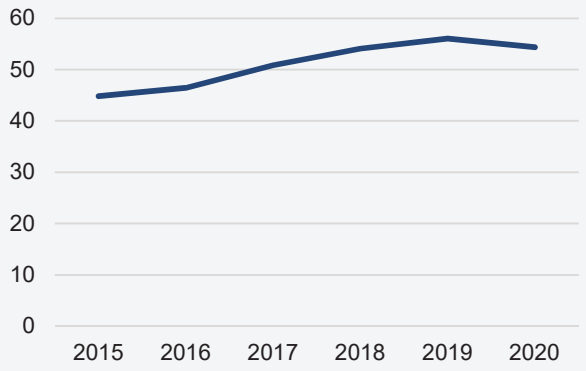
[43] For further details see the Financial Stability Report for the first half of 2020.

[44] In their various activity segments, the insurance companies deal with the management of assets for their members, in return for which they collect management fees. With respect to the management of assets in policies managed in trust for savers sold since 2004, the company is entitled to fixed management fees at a monthly rate of up to 0.05 percent of accumulated assets. With respect of the management of assets in policies managed in trust for savers sold between 1992 and 2003, the company is entitled to these fixed management fees as well as variable management fees at a rate of up to 15 percent of the real yield after deduction of the fixed management fees. In the case of a loss, the company is not entitled to the variable management fees until the cumulative loss is covered. With the recovery in the markets during the second half of the year, the companies resumed the collection of management fees.

[45] For savings for which the deposits to pension saving were halted between March 1st 2020 and June 2021, the financial institutions are not raising the management fees they collect to more than the average management fee collected in the fund. This is in contrast to the maximal management fees which the financial institutions are eligible to collect in these cases in normal periods.

During 2020, there was a decline in the collection of premiums by the insurance companies (Figure 49), and in particular the collection of premiums for life insurance declined by 5 percent due to the exit of savers from the labor market during the COVID-19 crisis (since during a period of unpaid leave there is no automatic deduction for pension saving). The collection of premiums for general insurance and health insurance remained unchanged in 2020 in view of the contraction in economic activity and despite the steep decline in the sale of travel insurance policies. The companies are reporting an attenuation of the drop in premium collection in the last quarter of 2020, with the exit from the crisis. During the first quarter of 2021, premium collection totaled NIS 13 billion, which is similar to its level in the same quarter of 2020.

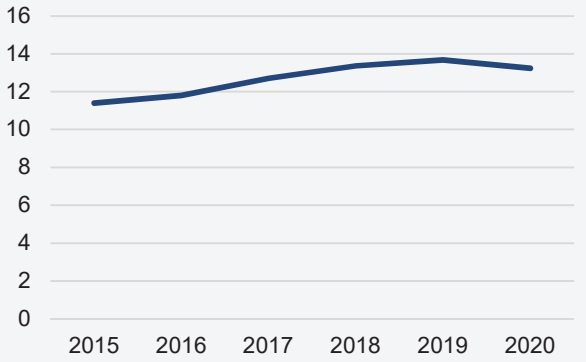
Figure 49
Insurance Companies' Gross Premia, 2015–2020 (annual data, NIS billion)



SOURCE: Based on published financial statements.

Operting expenses[46] declined during the COVID-19 crisis due to the efficiency measures adopted by the companies (Figure 50), including the reduction in human resources and the broad transition to digital services. Therefore, costs during the first quarter of 2021 were also somewhat lower than in the corresponding quarter of 2020.

Figure 50
Insurance Companies' Operating Expenses, 2015–2020 (annual data, NIS billion)



SOURCE: Based on published financial statements.

Profitability in the area of pensions, provident funds and general insurance fell for most of the companies due to the drop in economic activity and employment and the decline in profit from investments as a result of the COVID-19 crisis; however, the profitability of life insurance and health insurance rose significantly. This was influenced not only by the process described above (investments, premium collection and increased efficiency) but also by an accounting revision[47] that was adopted during the COVID-19 crisis, which reduced the value of the companies' liabilities, and primarily in view of the fact that discount rates were not lowered and life expectancy was not raised, as opposed to previous years. Thanks to the accounting revision, the insurance companies are able to calculate their insurance reserves based on aggregating various products (policies) in a way that allows for an offset between products and reduces the level of reserves. This change led to a drop in the value of liabilities in the amount of about NIS 2.9 billion in 2019 and NIS 0.9 billion in 2018, relative to the previous calculation. At the beginning of 2021, short- and long-term interest rates (on liabilities with a duration of 25 years) fell dramatically, and accordingly the value of insurance liabilities of all types rose. However, this is a relatively minor change which did not affect the companies' high level of profitability from business activity and from the price rises in the markets during that period.

[46] General and administrative expenses, fees, marketing expenses and other acquisition expenses.

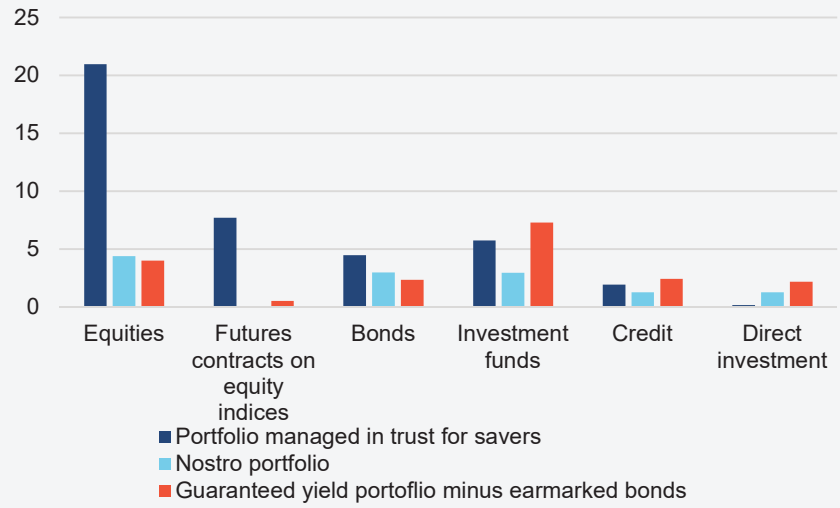
[47] Insurance Circular 2020-1-5 was published In March 2020. Its subject was the amendment of the instructions of the consolidated bulletin regarding the measurement of liabilities—the Liability Adequacy Test (LAT). According to the circular, the level of allocation was changed such that the LAT is calculated for all of the life insurance segments combined and similarly for all of the long-term care segments.

The ability of the companies to withstand a negative shock, such as that which occurred during the current crisis, is based on the degree of their financial resilience prior to the crisis. An examination of their solvency ratios, which is calculated according to the Solvency II Directive[48], shows that as of December 2020 the solvency ratio in Israel was 116 percent (170 percent if account is taken of the transition directive). All of the companies exceed the required solvency ratio after accounting for the transition directives[49] and three of them meet the required threshold even without taking them into account.

Nostro assets and exposure to foreign currency

Unlike the rest of the financial institutions that manage the funds of savers in trust, the insurance companies also manage a portfolio of their capital (nostro), from which they meet the commitments to their beneficiaries.[50] Therefore, the investment of nostro funds can create a prudential risk to the insurance companies and they are managed according to the Solvency II regulations, which also relate to the management of capital (nostro). Given the upward trend in the exposure of the financial institutions' assets to other countries and to exchange rates, we will examine whether there is a concern regarding these exposures in the insurance companies' nostro portfolio. For the sake of comparison, we will also examine the holdings in the portfolio that is managed in trust by the insurance companies for savers.

Figure 51
Insurance Companies' Foreign Portfolio Exposure, December 2020 (percent)



SOURCE: Based on reports from the institutional investors.

[48] For a detailed discussion of the Solvency II Directive, see the Financial Stability Report from June 2015 and from December 2015.

[49] On June 1st, 2017, the Capital Market Supervisor published a circular containing directives that apply to a solvency ratio regime based on the Solvency II directive to the insurance companies. The circular included transition directives regarding the implementation of the directive's provisions, according to which the companies must gradually increase the ratio of recognized capital to required capital in coming years, according to milestones. In October 2020, the Commissioner of Capital Markets amended the general solvency regime directives. This included, among other things, the transition period directives to the rules prevailing in Europe. Thus, the manner of calculating the transition directives was changed, and companies that implement the European model will be required to have a solvency ratio of 100 percent by the end of 2032.

[50] The nostro portfolio constitutes the companies' capital buffer. In the case of insurance companies, it includes the profits of the company, the capital against the liabilities of general insurance and health insurance and the capital against guaranteed-return policies. The rest of the financial institutions have smaller amounts of capital consisting only of their earnings and there are almost no regulatory requirements that apply to it.

The exposure of the insurance companies to other countries[51] stood at 45 percent of the value of the portfolio managed for savers at the end of 2020 and 12 percent of the nostro portfolio. Figure 51 presents the main components of the insurance companies' investments abroad. Unlike the portfolio managed for investors, in which most of the exposure is to foreign equities (both direct and indirect through futures contracts), the nostro portfolio is more diversified. A box in the Financial Stability Report for the first half of 2020 described the shock to the domestic market as a result of the exposure of institutional investors to futures contracts on foreign share indices. Unlike the portfolio that they manage in trust for savers, the insurance companies' nostro portfolio has no exposure to these futures contracts. It is interesting that in both the portfolio managed for savers and the portfolio of old policies with guaranteed return (since it provides a guaranteed return it is managed in the nostro portfolio), there is a low level of exposure to equities, there is no exposure to futures contracts on equity indices and the companies prefer exposure by means of nontradable assets and investment funds (Figure 51). The exposure to equities in the nostro portfolio remains relatively constant over time and most of the increase in the holding of foreign assets during the past decade has been in non-liquid investments, as described above. In the portfolio managed in trust for savers, the increased holding of foreign assets during the past decade is due to a variety of investment products (including equities). It may be that since the investment portfolio is not liquid from the viewpoint of the savers (old policies with preferred terms), the companies can invest in longer term investments that include a premium for low liquidity. For further details on the increase in foreign exposure in the portfolio managed in trust for savers and among the rest of the financial institutions, see the Statistical Bulletin for 2020.

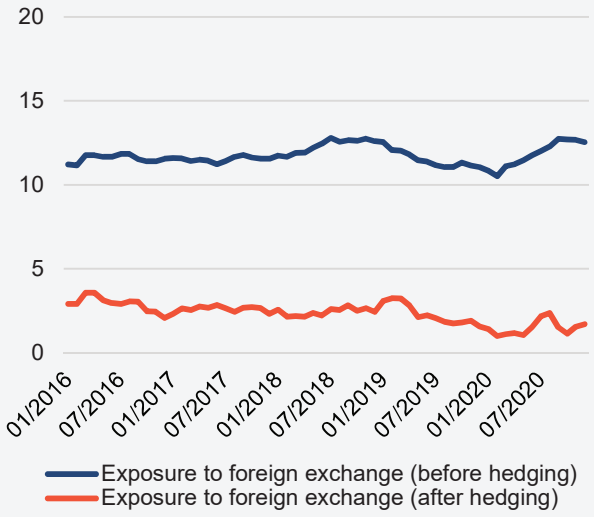
Not only is there a low level of foreign exposure in the nostro portfolio, its exposure to foreign currency is also significantly lower than of the portfolio managed in custody for savers (Figure 52 and 53). In practice, foreign currency exposure is less than 2 percent of the total nostro portfolio, in contrast to about 20 percent in the savers' portfolio. It is interesting to observe that the foreign currency exposure in the nostro portfolio and in the portfolio managed in trust for savers has been stable during the entire period (even during the period of the COVID-19 crisis when there were shocks to the exchange rates). Unlike in the case of the portfolio managed for savers, the low exposure to foreign exchange in the nostro portfolio is apparently due to the fact that the nostro assets are subject to the Solvency II regulations and considerations of capital management, which make the investment in foreign exchange less worthwhile. The graphs show the significant increase in the recent exposure of the companies' holdings abroad to foreign currencies. Between the end of 2019 and the end of 2020, there was an increase of 5 percentage points in the portfolio managed in custody and 1 percentage point in the nostro portfolio. The graphs show that most of the increase was accompanied by an increase in exposure to foreign currencies, although in the case of the nostro portfolio most of the exposure is hedged.

The reduction in exposure to foreign exchange was accomplished mainly by means of futures contracts on foreign currencies. Unlike futures contracts on other assets, this contract does not involve significant risk since the collateral for the transaction, which is shekel-denominated, hedges the companies and therefore will not lead to a phenomenon of rapid liquidation of assets for use as collateral against a contract. In sum, in our assessment, the investment of the insurance companies' nostro funds abroad does not involve a risk to stability.[52]

[51] Including assets that create an exposure to other countries without any presence there, such as derivatives and investment in Israeli ETFs that are invested abroad.

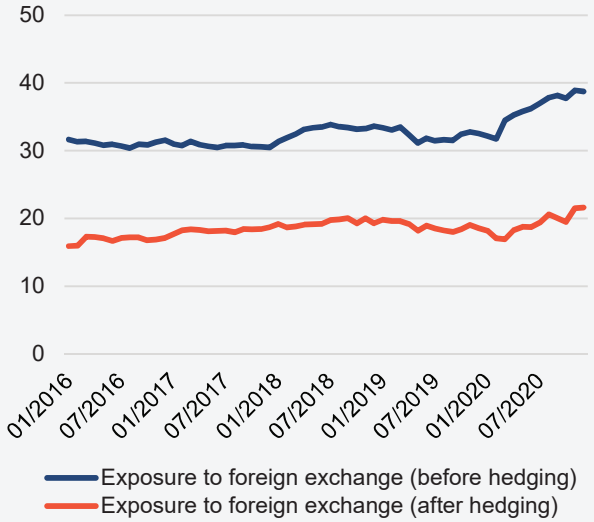
[52] In contrast, the insurance companies' nostro funds are exposed indirectly to this risk due to the investment of savers' funds in futures contracts on equity indices, as described in the box in the Financial Stability Report for the second half of 2020.

Figure 52
Total Exposure to Foreign Exchange in the Nostro Portfolio, 2016–2020
(monthly data, percent)



SOURCE: Based on reports from the institutional investors.

Figure 53
Total Exposure to Foreign Exchange in the Profit-Sharing Portfolio, 2016–2020
(monthly data, percent)



SOURCE: Based on reports from the institutional investors.

4. Stress scenarios for the financial system

The exit of the economy from the health crisis presents policy makers with two major challenges. The first is rooted in the uneven recovery in the business sector; the continuing slowdown in the accommodation, transportation and trade industries, due to the lack of incoming tourism; and the rise in the default rate. The second is related to increased macroprudential risk, namely a reversal in the trend of financial asset prices. This chapter describes two possible risk scenarios related to recent developments and examines the degree to which they affect the stability of the financial system.

4.1 A slow recovery in parts of the business sector and continued high levels of morbidity

The exit from the health crisis is creating major challenges for policy makers. The government's high level of debt may create pressure to trim back expansionary fiscal policy[53], however, at the same time, the difficulties facing portions of the business sector may lead to an increase in bankruptcies. Although there is a clear recovery occurring in economic activity, the employment rate is still 4.5 percentage points lower than in 2019. Both the ECB[54] and the BIS[55] point to the risk of an increase in bankruptcies in all of the economies that were affected by the pandemic, as the assistance measures adopted by the various countries are phased out. In particular, the ECB is warning that the recovery is not uniform across the business sector, such that the situation of small and

[53] A consequence of Operation Guardian of the Walls, which lasted 11 days and ended quite a while ago, is an expected increase in the budget deficit, due to the expected demands by the defense sector for a budget increase to finance the operation. This additional financing, in addition to the structural deficit that prevailed prior to the COVID-19 crisis, is liable to further narrow the government's fiscal room to maneuver.

[54] https://www.ecb.europa.eu/pub/financial-stability/fsr/html/ecb.fsr202105~757f727fe4.en.html

[55] https://www.bis.org/publ/bisbull40.htm

medium-sized businesses is worse than that of other businesses. Most of the businesses in Israel are small or micro (up to 20 employees) and they employ 40 percent of the workers in the economy. As in the rest of the world, small businesses have been more affected than the rest by the health crisis (see the chapter on Macroeconomic Activity, Figure 2).

The main health limitations that remain apply to incoming tourism. Many countries are still experiencing a high rate of infection and their pace of vaccination is slow. It appears therefore that incoming tourism will continue to be negligible. Domestic tourism is not sufficient at this stage to compensate the accommodation industries for the lack of incoming tourism. At the end of June, purchasing in the restaurant industry was about 30 percent less than the expected trend while that in the tourism industry was about 46 percent lower. It appears that the lack of incoming tourism is also affecting businesses in transportation, trade and culture.

4.2 A downward correction in the prices of financial assets

The prices of financial and housing assets in Israel increased during the period being surveyed, as was the case in many other countries (Section 2.2 in this report – The Assets Market). This occurred against the background of expansionary fiscal and monetary policy in Israel and abroad and intervention by central banks in the markets. Accommodative monetary policy has for years served as one of the tools for supporting economic activity and the inflationary environment and the degree of accommodation has risen during the COVID-19 crisis both in Israel and abroad. The increase in prices of financial assets began prior to the recovery in real economic indicators, some of which still point to a crisis situation. They apparently are due to expectations of a recovery and as mentioned also on an expansionary fiscal and monetary environment. In recent months, a clear upward trend has been seen in long-term nominal yields abroad (Section 2.1.2 – The Global Environment). The gap between them and real yields has widened, which was translated into increased inflation expectations, including the inflation risk premium. It is still too early to determine whether the increase in inflation worldwide, and in particular in the US, is the result of persistent factors or is based on transitory supply factors. If it turns out that these forces are persistent, they are liable to bring about a change in course, away from accommodative monetary policy in other countries. As a result, short-term interest rates will rise. We assess that this situation will be detrimental for, first and foremost, equity prices abroad, though also for bond prices, including those of corporate bonds. Apart from that, many countries are dealing with high levels of government and private debt that have been exacerbated by the health crisis, such that the risk of a correction in the international bond market has risen and may have an effect on the prices of global financial assets. This outcome is likely to quickly trickle down to the domestic financial system and to have a significant impact on economic activity and on the financial institutions. The communication and high tech industry—a major component in Israel's GDP and employment situation that has benefited in recent months from global and domestic expansion—is particularly reliant on the situation abroad, with respect to both demand for its goods and its sources of financing.

Box 1
An analysis of business sector activity by business size following the removal of mobility limitations imposed during the COVID-19 pandemic[1]

- In this box, we analyze the reports by employers to the National Insurance Institute (NII) on their employee situation and examine whether and to what extent there has been a recovery in business sector activity during the first quarter of 2021, following the lifting of most of the social distancing limitations imposed during the COVID-19 pandemic.
- The data point to a recovery in business sector activity: the proportion of employers reporting to the NII that they had stopped employing workers, which stood at about 20 percent in December 2020, declined to about 16 percent in March 2021, in parallel with the lifting of social distancing limitations.
- Notwithstanding the recovery, the proportion of employers who did not employ workers in March 2021 was still 3 percentage points higher than prior to the pandemic. The increase is primarily due to small employers who stopped employing workers during the first lockdown and remained in that situation until March 2021. Therefore, it is not reflected in an unusually large loss of jobs relative to the pre-crisis level.
- In March 2021, at least 35,000 employers had significantly fewer workers (by at least 80 percent) than prior to the crisis. This figure reflects an increase of tens of thousands of employers relative to the "natural" number of businesses (in other words, without the effect of the pandemic) that are significantly cutting back their number of workers. The increase relative to the "natural" number is primarily due to small employers.
- Among medium-sized to large employers, it appears that the proportion who have reduced their number of employees steeply relative to 2019 is particularly high in the accommodation and food services industry and in the art, entertainment and leisure industry. In contrast, the small businesses that significantly cut their number of employees are dispersed among all industries.

The COVID-19 pandemic that began in 2020 and the social distancing restrictions that accompanied it had a detrimental effect on economic activity and in particular on business sector activity. In what follows, we examine whether and to what extent the business sector in Israel has recovered following the lifting of the social distancing restrictions. The National Insurance Institute routinely collects administrative data on the number of employee posts (and total wage payments) among all employers, including reports on non-employment. As part of that, an employer that hired employees in the past declares that in the current month such workers were not employed.[2] Rosenberg et al. (2021)[3] relied on the NII reports of about 290,000 employers and estimated the effect of the pandemic on their economic activity by calculating the

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1 Thanks go to Mark Rosenberg from the National Insurance Institute for supplying the data and to Eyal Argov from the Bank of Israel Research Department for notable contributions to the data processing. The analysis in this box was carried out using the database available to us at the time of writing and therefore relates to the period ending in March 2021. The preliminary data for April 2021 indicates that there has not been any significant change in the level of business sector activity relative to March.

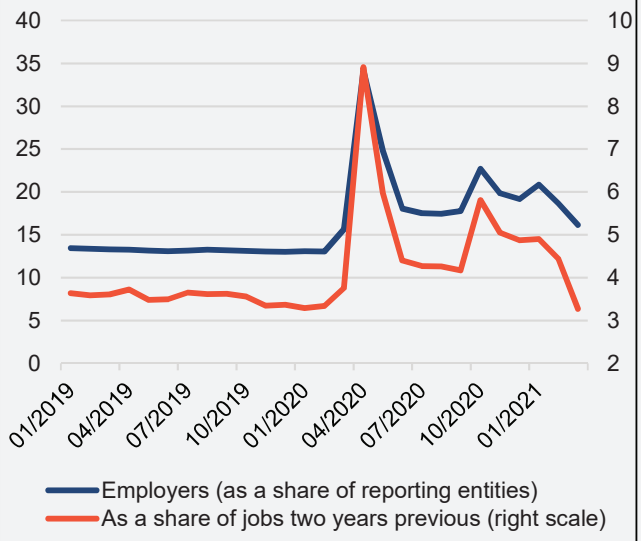
2 The data do not include the self-employed who do not employ workers. Of the total businesses that were active in 2014 (which report to VAT) about 50 percent do not employ workers according to the Central Bureau of Statistics publication: Businesses and Income by Industry 2012–14.

3 Rosenberg, Mark, Eyal Argov, Kobi Braude, Edith Sand, and Oded Cohen (2021), "An analysis of the number of businesses that cut back their number of workers during the COVID-19 pandemic," Working Paper, National Insurance Institute – Research and Planning Authority (June 2021). [Hebrew] https://www.btl.gov.il/Publications/corona/Pages/Hekef-asakim.aspx

rate of decline in their number of employees. In this box, we will use a similar methodology to determine whether and to what extent there was a recovery in activity in the business sector during the first quarter of 2021, following the lifting of the majority of social distancing restrictions. In order to estimate the effect of the economic slowdown of business activity during the COVID-19 period on the labor market, we will present the results of the analysis in terms of both the number of businesses that apparently experienced a slowdown in activity and the aggregate number of jobs among those same employers two years previously.[4]

Figure 1 presents the share of employers that did not employ workers out of total employers that reported to the NII from January 2019 to March 2021, in terms of both number of businesses and number of salaried positions[5] (on the basis of number of salaried positions in the same month two years previously).

Figure 1
Employers Who Did Not Employ Workers as a Share of Reporting Entities, and Jobs at Those Employers in the Same Month Two Years Previous as a Share of Total Jobs, January 2019–March 2021 (percent)



SOURCE: National Insurance Institute and Bank of Israel based on the methodology in Rosenberg et al. (2021).

The figure indicates that the proportion of employers that stopped employing workers was about 20 percent in December 2020 (about 56,000 businesses), and that proportion began to decline in parallel with the removal of social distancing restrictions starting from the beginning of 2021. Thus, in March 2021 the proportion was about 16 percent, which represents about 44,000 businesses. This level is still higher than that reported prior to the pandemic, i.e., about 13 percent. Nonetheless, the fact that the total salaried positions in 2019 among businesses that did not employ any workers in March 2021 returned to its pre-crisis level, i.e., 3 percent of positions, indicates that the enduring effect of the crisis in March 2021 is concentrated primarily among small businesses, which employ a relatively small number of workers.

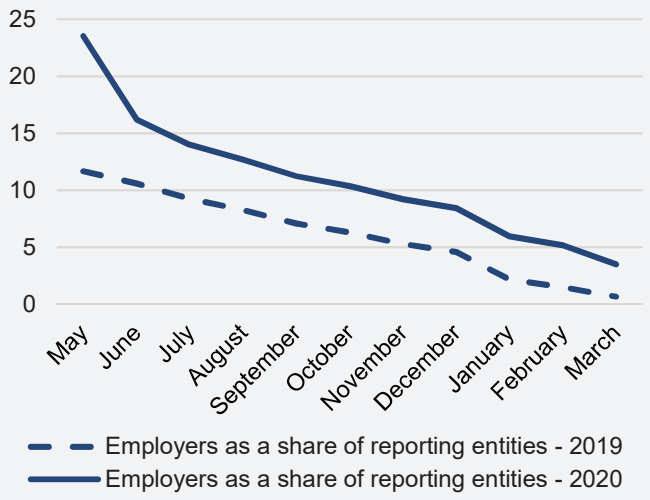
The increase in the proportion of businesses that did not employ workers in March 2021 relative to the proportion prior to the crisis may be reflecting persistent difficulties in recovering from the effect of the

[4] Unlike the original methods used by Rosenberg et al. (2021), in which the reference point in terms of number of positions was always the parallel month in the preceding year, here we calculate the change in number of salaried positions on the basis of the figure for the parallel month two years previously. The intention is to neutralize the effect of COVID-19 on the reference numbers a year after the crisis.

[5] This analysis also includes employers that did not exist in the previous year or did not employ workers in the previous year. It does not include employers that did not employ workers for a continuous 12-month period, that are deleted from the sample.

pandemic.[6] If this is the case, we would expect to see a significant increase in the proportion of employers that discontinued their employment of workers near the time of the first lockdown and remained in that situation continuously until March 2021. Figure 2 shows the proportion of employers who did not employ workers continuously starting from April 2020, (the imposing of the first lockdown), until one of the months between May 2020 and March 2021. As a reference point for the analysis, we use 2019 data which represents the "natural" level of employers that do not employ workers on a continuous basis during a normal period.

Figure 2
Employers Who Did Not Employ Workers Continuously from April 2020 until Each of the Following Months, Compared with the Same Month in the Previous Year (percent)



SOURCE: National Insurance Institute and Bank of Israel based on the methodology in Rosenberg et al. (2021).

The graph shows that 4 percent of businesses reported that they stopped employing workers near the time of the first lockdown and remained in that situation continuously until March 2021. The figure for the corresponding period in 2019, which reflects the "natural" level, i.e., without the effect of the pandemic, is only one percent. The difference between the figure for March 2021 and the corresponding figure for 2019 is likely to be the result of, among other things, the enduring effect of the social distancing restrictions imposed on business activity during the pandemic.[7] The difference of three percentage points is identical to the total increase in the proportion of businesses that did employ workers in March 2021 relative to the pre-crisis figure, as shown in Figure 3.1.

The negative effect of the COVID-19 pandemic on a business is liable to also be reflected in a partial reduction in number of employees (relative to the corresponding month two years previously). Figure 3.1 presents the distribution of changes in number of employees among medium-sized to large businesses (more than 10 workers two years previously) in each of the months from January 2020 to March 2021. Figure 3.2 shows the same analysis for small employers (up to 10 workers two years previously). The analysis includes, by definition, only employers that had been in existence for at least two years.

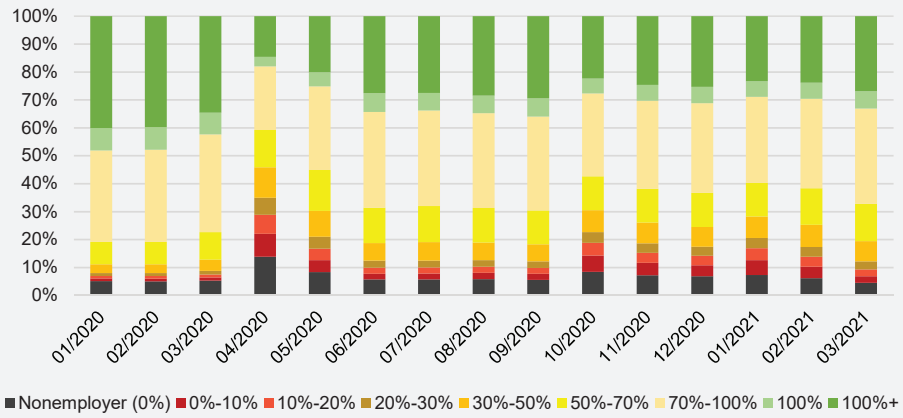
The data indicate that among 16 percent of the reporting businesses (about 35,000 in number) the labor force in March 2021 had contracted markedly, by at least 80 percent relative to the corresponding period in 2019. The figure for March 2019, which reflects the situation without the effect of the pandemic, was 11 percent

6 For example, an employer with a high proportion of fixed costs within his total expenditure is likely to experience heavy losses during a lockdown. If that employer's financial resilience and liquidity is not sufficient to cover the loss, he is likely to experience financial distress and perhaps bankruptcy. Nonetheless, there may be other reasons for the employer to no longer employ workers, such as a drop in demand for the business' goods or services due to the adverse effect of the lockdown on consumers.

7 Other factors that might explain this difference are the social distancing restrictions that remained in place in Israel in March 2021 and also the global situation of the pandemic, which affects certain industries in the domestic market, such as tourism and airlines.

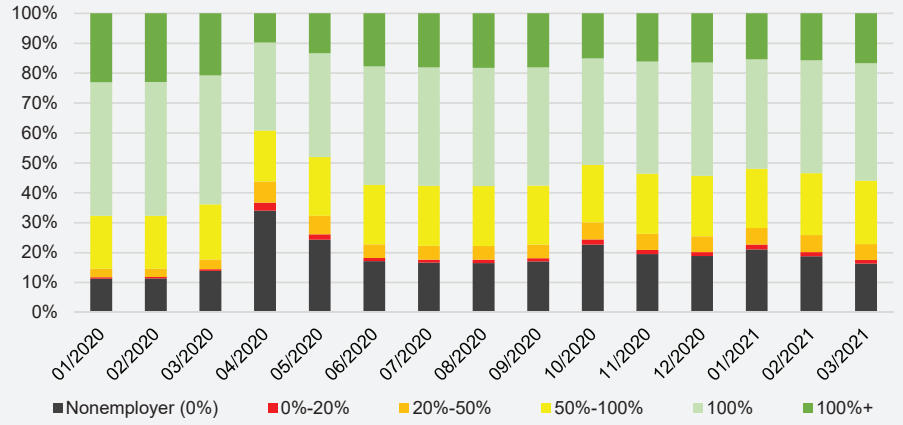
(about 25,000 business). Thus, it appears that as a result of the COVID-19 crisis, there was an increase in the number of businesses that reduced their number of workers by more than 80 percent and that number is 10,000 larger than the "natural" number that prevails during a normal period.[8] In terms of number of businesses, the vast majority of additional businesses that cut back their number of employees by a significant amount are small businesses (up to 10 positions). Nonetheless, the employee posts in 2019 that were in businesses that significantly reduced their number of workers in March 2021, i.e., about 70,000 jobs, are concentrated primarily in medium-sized to large businesses. In sum, it can be said that small employers that are in financial distress stopped employing workers, while among medium-sized to large businesses in financial distress there is only a partial cutback in the number of workers.

Figure 3a
Distribution of Changes in Workforce Size* Among Medium-Large Employers Relative to the Same Period Two Years Previous, January 2020–March 2021 (percent)



* Ratio between the number of jobs in the current month and the number of jobs in the same month two years previous.
SOURCE: National Insurance Institute and Bank of Israel based on the methodology in Rosenberg et al. (2021).

Figure 3b
Distribution of Changes in Workforce Size* Among Small Employers Relative to the Same Period Two Years Previous, January 2020–March 2021 (percent)



* Ratio between the number of jobs in the current month and the number of jobs in the same month two years previous.
SOURCE: National Insurance Institute and Bank of Israel based on the methodology in Rosenberg et al. (2021).

Among medium-sized to large employers, it appears that the proportion that have drastically cut back their number of workers relative to 2019 is particularly high in the accommodation and food services industry and in the art, entertainment and leisure industry. Among small businesses, there is a more diffuse distribution of employers that did not employ workers across industries.

[8] This may be the result of, as mentioned, the enduring effect of the restrictions imposed at the height of the pandemic—due to both the restrictions that remained in place in March 2021 and the global situation of the pandemic—on the activity of some domestic industries.

Box 2
Settlement patterns of payment flows in the Zahav system

Following the patterns of settlement in the payment systems makes it possible to identify the trends that characterize the activity of the payment system participants and their possible influence on the activity and normal functioning of the payment systems.

Like other central banks that operate payment systems for the settlement of high-value payments, the Bank of Israel operates the Zahav system, an RTGS-type[1] system for the final settlement of payments in real time.[2] This system is used for the final settlement of obligations between the financial institutions and therefore it has major systemic importance in ensuring the smooth and continuous activity of the Israeli economy.

In this box, we analyze the activity patterns of participants in the Zahav system during the period 2013–20. The first analysis relates to the intraday distribution of payments while the second relates to liquidity turnover.[3]

Timing of transactions

The early settlement of payment transactions in an RTGS-type system provides a longer time period for the resolution of failure events and increases the chance of settling the obligation of a failed participant by the end of the value day. Delays in the submitting of payment orders by system participants due to operational failures[4] increase the sensitivity of the system to liquidity failures. This is because an operational failure is liable to prevent a participant from sending payment orders, which provide the flow of liquidity that the other participants need in order to maintain their activity. The scope of the effect of an operational failure on the continuous activity of the system is dependent on the liquidity flow that is denied to the system participants at the time of that failure and on the reliance of the participants on that expected flow. An examination of activity levels according to the time period in which payments were settled in the Zahav system and their comparison across periods will be used to examine the settlement patterns during a business day in the system.[5]

Figure 1.a[6] presents the distribution of the daily total of transactions in the Zahav system by time period in 2013 and in 2020. The figure shows that 2020 is characterized by a high number of transactions during the period 9:00–9:15.[7] It can also be seen that when comparing the two years, the settlement patterns of the system participants are similar in their timing, and at every point in time before 15:00 the total payments

1 Real Time Gross Settlement.

2 A payment that is completed in the system is final and cannot be reversed. The recipient of the payment can make immediate use of the funds.

3 Payments by the participating customers and interbank flows (initiated flows), not including loans between the participants. The analysis includes all of the participants in settlement in the system, not including the Bank of Israel and the CLS. The database includes long business days only: from 7:45 to 18:45 (without Fridays and holiday eves).

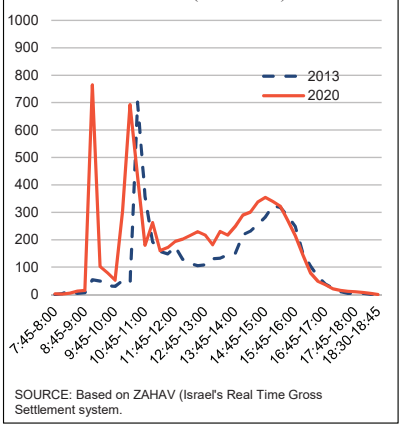
4 An operational failure is an event in which a participant cannot send a payment instruction in the system.

5 The timing of the participants' activity was calculated by dividing the business day of the Zahav system into 44 time periods of 15 minutes in length.

6 In all of the graphs that appear in this section, the value of each time period was calculated according to the median over about 250 business days.

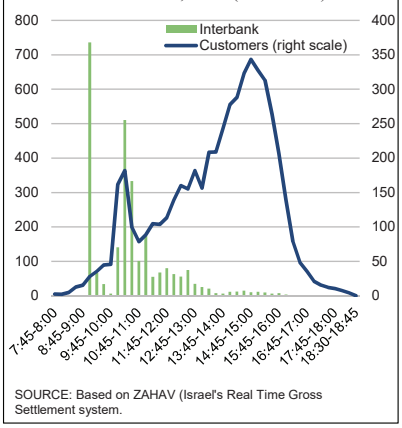
7 This level of this activity began to develop in 2015.

Figure 1a
Total Value of Initiated Transactions, 2013 and 2020 (NIS million)



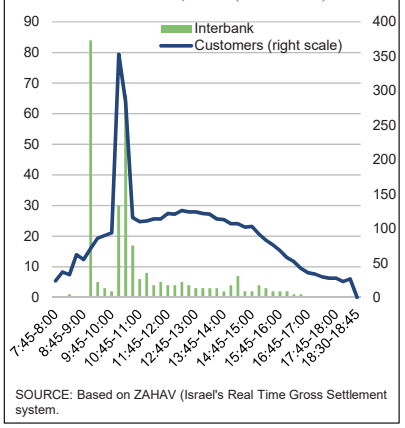
SOURCE: Based on ZAHAV (Israel's Real Time Gross Settlement system.

Figure 1b
Total Value of Customer and Interbank Transactions, 2020 (NIS million)



SOURCE: Based on ZAHAV (Israel's Real Time Gross Settlement system.

Figure 1c
Number of Customer and Interbank Transactions, 2020 (NIS million)



SOURCE: Based on ZAHAV (Israel's Real Time Gross Settlement system.

settled are larger in 2020, an increase that reflects the growth in the system's activity over time.

In order to better understand the settlement pattern of payments in the Zahav system, Figures 1b and 1c present the distribution of the total value of initiated transactions and the distribution of the number of initiated transactions that were settled in the Zahav system in 2020, while differentiating between interbank transactions and customer transactions. The graphs show a high concentration of interbank transactions during the period 9:00–9:15[8] and also that the number and total value of interbank transactions and customer transactions taken together are high during the period 10:00–10:45. The high levels of activity during the aforementioned time periods are aligned with the settlement windows of the clearing houses, during which the levels of activity on a long business day are the highest. It may be that the system participants prefer to concentrate their activity in terms of quantity and value after receiving large liquidity flows from these clearing houses. The number of customer transactions increases at a moderate rate until around midday (12:15–12:30) and subsequently it gradually declines until the close of the business day. In contrast, the total value of the customer transactions quickly increases starting from the midday hours until reaching a peak during 14:45–15:00. This indicates that the customer transactions, which have a high value, are settled in the later part of the business day.[9] The number of interbank transactions is significantly less than the number of customer transactions[10], although the value of the interbank transactions is higher. The system participants seldom send interbank transactions with a high value during the later hours of the day (as can be seen in Figure 1a and 1b), i.e. from 13:30 until 16:00. Thus, the participants concentrate payment transactions with a high value during the early hours of the day.

8 The total value of interbank transactions is usually higher than total customer transactions.

9 It is reasonable to assume that the timing of customer transaction settlements is determined by the payment execution decisions of the participants' customers and therefore the settlement pattern in the rest of the time periods of the business day reflects payment orders in the domestic economy that are initiated by the participants' customers (and to a lesser extent by the system participants).

10 The number of customer transactions account for about 90 percent of the total transactions in the dataset.

An analysis of the distribution of the settlement of initiated payment transactions in the Zahav system shows that the lion's share of the value that is concentrated in the early hours of the day is due to interbank flows. This pattern implies that the system participants send transactions with a high value during the early hours of the business day. This settlement pattern contributes to reducing the operational risk of failure by a system participant.

Liquidity turnover in the system[11]

RTGS-type systems usually require a high level of liquidity in order to support the settlement of payments on a gross basis. In order for payments to be settled on a gross basis (each transaction separately, one after another), the participants in the system have to maintain sufficient liquidity in their settlement account. At the same time, gross settlement contributes to the stability of the payments system by reducing credit risk (the risk that a system participant will not be able to meet his obligations at the time of settlement). Reducing credit risk in the payments system lessens the risk of a systemic failure event, in which a participant's failure to meet his financial obligations will cause liquidity failures among additional participants in the system. The quantity of liquidity that participants in a RTGS-type of payments system consume in order to execute their payments can be optimized by active management of the intraday liquidity or by the recycling of liquidity from the payment transactions received from the rest of the participants (herein: receipts).[12] The use of receipts in the execution of payments is the cheapest way to obtain liquidity, although it involves a risk to the continuous activity of the payments system since it is liable to encourage the delay of execution to a later time in the day and also increases the dependence between transactions. In this way, the failure of a participant in the case of this settlement pattern increases the probability of a failure of participants whose activity in the system is dependent on the liquidity flow from the participant that failed.[13]

Turnover is an indicator for assessing the use of liquidity in a payments system. It measures the extent to which the participants in the Zahav system recycle the liquidity flow they receive in the form of receipts. It is calculated as the ratio of the total value of payments during a day to the total net maximal debit that accumulates in a day (the use of liquidity).[14]

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11 The analysis in this section is based on methods applied in the following sources:
"Liquidity usage in TARGET2", Loana Duca-Radu and Sara Testi, ECB Economic Bulletin, European Central Bank, 03/2021, available free of charge on the ECB's website, Copyright © for the entire content of the ECB's website: European Central Bank, Frankfurt am Main, Germany.
"Bank behaviour and risks in CHAPS following the collapse of Lehman Brothers", Evangelos Benos, Rodney Garratt and Peter Zimmerman, Working Paper series No.451,Bank Of England, June 2012. Contains public sector information licensed under the Open Government Licence v3.0
https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/

12 A participant in the system has a number of sources of financing for payment transactions:
a. Payment transactions received from the other participants (receipts).
b. Liquidity from the participant's settlement account in the Zahav system.
c. Intraday credit (not included in this analysis).

13 Researchers identified a high concentration of payments during later hours of the business day in the US Fedwire system in 2000. They explained this on the basis of a "coordination game" of payments and receipts between the system participants, with the goal of minimizing the financing cost of meeting their obligations. During the 9/11 event in September 2001, the coordination between participants was severed and a broad shortage of liquidity developed among the participants operating in the system at that time.

14
$$Turnover_s = \frac{\sum_{i=1}^{N}\sum_{t=1}^{44}\text{Payments}_{i,s,t}}{\sum_{i=1}^{N}\max\left\{\max_T\left[\sum_{t=1}^{T}\left(\text{Payments}_{i,s,t}-\text{Receipts}_{i,s,t}\right)\right],0\right\}}$$

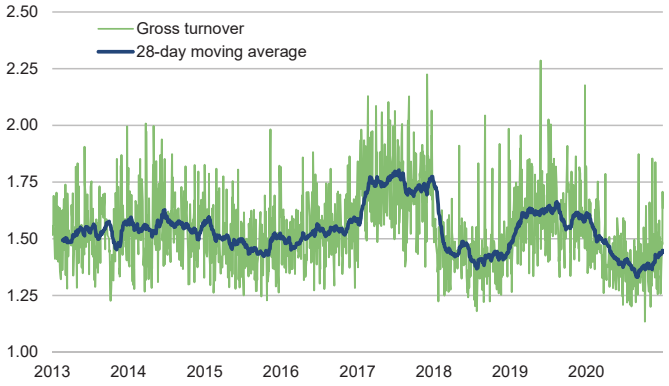
where s is the business day, i denotes the participant and t is the time interval (15 minutes).

Figure 2a presents the indicator while Figure 2b presents the numerator and denominator of the indicator for the Zahav system during the period 2013–20. Figure 2a shows that the value of the indicator ranged from 1.1 to 2.3 during this period.[15]

The data for the activity patterns of the Zahav system participants show that the participants do not generally match payments to receipts and thus recycle payments among themselves. A number of factors may influence the liquidity turnover results in an RTGS-type payments system:

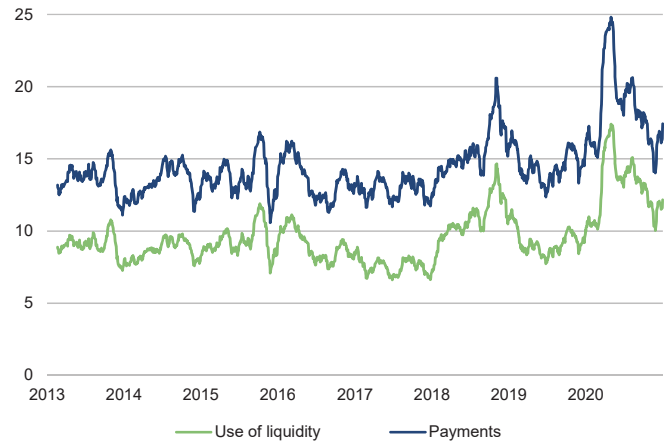
- The way in which participants manage their intraday liquidity.
- Technological mechanisms whose function is to optimize the management of participants' liquidity.
- The level of liquidity balances in the participants' settlement accounts (available liquidity).

Figure 2a
Turnover of Initiated Transactions in the ZAHAV System, 2013–2020
(daily data)



The indicator notes the average number of times each liquidty unit is used by participants to make payments during a business day in the system. For instance, an indicator result of 2 means each liquidity unit was used by particpants to make payments twice on an average day.
SOURCE: Based on ZAHAV (Israel's Real Time Gross Settlement system.

Figure 2b
Payments and Use of Liquidity, 2013–2020 (NIS billion)

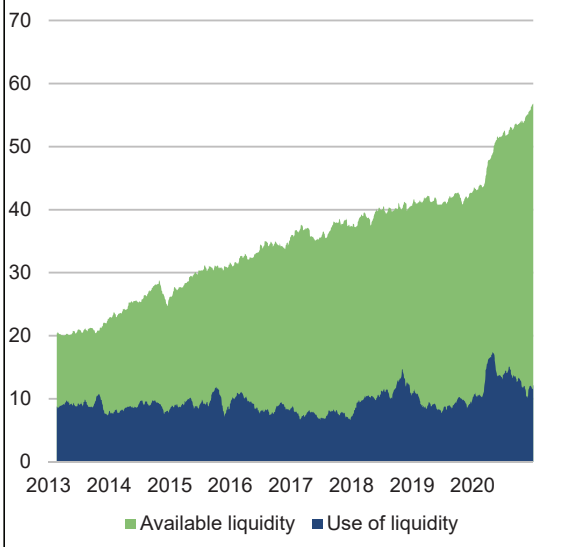


SOURCE: Based on ZAHAV (Israel's Real Time Gross Settlement system.

[15] The indicator provides the average number of times that each unit of liquidity is used by the participants to carry out payments during the business day. For example, a value of 2 means that each unit of liquidity is used twice on average by the participants to carry out payments during a business day.

Figure 3 presents liquidity usage and available liquidity[16] in the Zahav system from 2013 until the end of 2020. The graph indicates that the maximal use of liquidity by system participants for the settlement of initiated transactions on a business day is significantly lower than the available liquidity available to them in order to carry out payments. The results are consistent with the assumption that the level of liquidity use is dependent on the management of intraday liquidity by each participant, namely the extent to which the participant matches receipts and payments. To the extent that a participant's available liquidity is high, he will have less need to match payments to receipts. This situation may also encourage participants to settle their payments earlier and thus contributes to the resilience of the system to the effect of a failure.

Figure 3
Use of Liquidity and Available Liquidity, 2013–2020 (daily data, NIS billion)



SOURCE: Based on ZAHAV (Israel's Real Time Gross Settlement system.

[16] The liquidity balances at the end of the business day, not including intraday credit.

Box 3
The risks implicit in passive investments

- In this box, we will survey the mutual funds market and focus on the effect of the increasing share of passive investment on the Israeli stock market during the COVID-19 crisis.
- In recent years, there has been a significant increase in the share of passive investment by means of mutual funds. This trend intensified during the COVID-19 crisis, primarily due to the high level of redemptions from the actively managed mutual funds. There is an extensive literature on the adverse effect of this kind of investment, namely an increase in the comovement of equity returns, which reduces the ability to diversify risk and thus raises the systemic risk in the market.
- An examination of the Israeli market did not find evidence of any realization of the risk described in the literature and in particular an increase in comovement and convergence of the stocks' beta. Therefore, we believe that passive investment has not increased the vulnerability of the market during the COVID-19 crisis.

In recent years, index-tracking investments (passive investment) have become increasingly popular and they are viewed as inexpensive and efficient from the viewpoint of the investor. However, as the level of these investments and their share in total investment grow, there is increasing concern that the result will be increased comovement of the index assets. This will constrain the possibility of diversifying risk and will increase systemic risk (which cannot be diversified away). Mutual funds are the main investment instrument for investors interested in passively tracking the market indexes. This box will survey the investment by households by way of the tracking (passive) funds and the managed (active) funds, the risks they represent and the differences between them, based on observations during the past two years and in particular during the coronavirus crisis.

At the end of 2018, a reform was carried out in the market for index-tracking instruments that discontinued the use of ETNs, which were essentially obligations of the issuer to provide the return of a specific index. They were replaced by ETFs, which are closed-end mutual funds[1] that hold the underlying assets and are obligated to provide investors with a return that is as close as possible to that of the index being tracked. In addition, there are open funds that track indices (tracking funds) and which do not trade continuously, unlike the closed-end funds, but rather only once a day according to the value of their holdings. The activity in the base assets that they hold is derived from the trading of the funds, as in the case of active funds. The closed-end funds, which as mentioned are traded continuously, do not necessarily generate activity in the underlying assets since in the cases where the fund share is traded between two investors directly, the fund manager does not have to buy/sell the underlying assets. This box will be based on Tel Aviv Stock Exchange data since the end of the reform, namely from January 2019 until the end of April 2021.

The growth in passive index-tracking investments is well-documented in the literature. Sullivan & Xiong (2012) claim that the growth in passive investment has brought about an increase in the comovement of share prices in the US and they show that it correlates with a convergence of the returns on the underlying assets. This is an undesirable consequence of passive investing since it raises systemic risk and reduces the advantage of investment diversification.

[1] An open-end fund offers shares to the public according to the prospectus that it published, except during a temporary closure. A closed-end fund offers a limited number of units and the price of a participation unit is determined by the demand and supply for the fund.

Wurgler (2010) found that investment in indices distorts prices and in particular leads to underpricing of risk. He claims that widely followed indices not only provide information on market activity but also generate an economic effect on the market that the indices are meant to represent. For example, when a new stock is included in the S&P 500 Index, its price rises on average by about 9 percent, even though nothing substantial has changed from an economic perspective and there is no new information on the stock except its inclusion in the Index. This rise in price is substantially larger than what can be explained by the improved liquidity in that stock, as measured by the daily trading volume and the bid/askspreads. With regard to stocks that have been removed from the Index, the negative effect is even larger in size. In addition, Wurgler found that the inclusion of a stock in the Index leads to an increase in the comovement of returns between the said stock and the rest of the stocks in the Index. Greenwood and Sosner (2007) found a similar effect for the Japanese index (the Nikkei 225). Bhattacharya and Glapin (2011) showed that the growth in passive investment is a global phenomenon that is gaining momentum in the developing markets.

Claessens and Yafeh (2013) examined the effect of a new stock entering a widely followed index in 40 different countries and found that the event raised the comovement of returns on that stock and the return on the index.

In a survey by the BIS, Turner and Sushko (2018) claim that since the share of passive investment in the financial markets is still small relative to active investment (according to Bloomberg estimates made in 2019, about 18 percent of the US equity market and about 6.4 percent of the global stock markets), the negative effect of index-tracking investment is not large. However, its share is expected to grow as this type of investment gains in popularity. The authors warn that an increase in the correlation between returns on stocks included in the same index will raise the level of systemic risk in the market and will reduce the extent to which information on a specific company can influence its price, a situation that implies a distortion in the pricing of financial assets.

To illustrate the theoretical risk, we carried out a simulation of two portfolios that are identically diversified among 200 stocks. In the first, the comovement of each of the stocks with the market portfolio (beta in the CAPM model) is sampled from various distributions, such that the average of all the betas in the portfolio is 1. In the second, the beta of each stock is equal to 1, an extreme situation that emphasizes the inability to diversify risk in this situation as a result of full comovement. An exogenous shock was fed into the simulation in the form of a 10-percent decline in the price of one of the stocks. In the portfolio with all betas equal to 1, each stock falls identically, such that the return on the portfolio is equal to -10 percent. However, although the return on the portfolio in the uncorrelated market changed in a random manner in each iteration, the size of the change was small relative to the other portfolio and in the vast majority of cases it is limited to the range [-2%, 2%].[2]

As can be seen in Figure 1, the passive funds constitute a substantial share of the mutual funds market and it is increasing quite rapidly—from about 36 percent of the value of the funds at the beginning of 2019 to about 44 percent in April 2021. This trend is not unique to Israel and is observed around the world. In the US, passive funds constitute about one-half of the total value of the mutual funds market. During the past year, many new passive funds have been created in Israel (both those that track Israeli indices and those

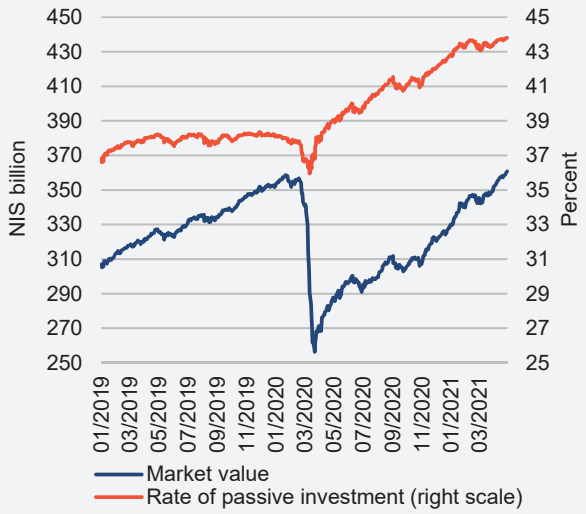
[2] We carried out a number of similar simulations under various assumptions regarding the distribution of betas.

that track foreign indices), as can be seen in Figure 2.

Nonetheless, when one differentiates between funds that invest in Israel and those that invest abroad, a different picture emerges: most of the investment abroad by means of mutual funds is in the form of passive funds while in the case of funds that invest in Israel most of the investment is by means of active funds (Figure 3). This phenomenon is likely explained in part by the confidence among investors in the relative advantage of fund managers in choosing domestic investments.

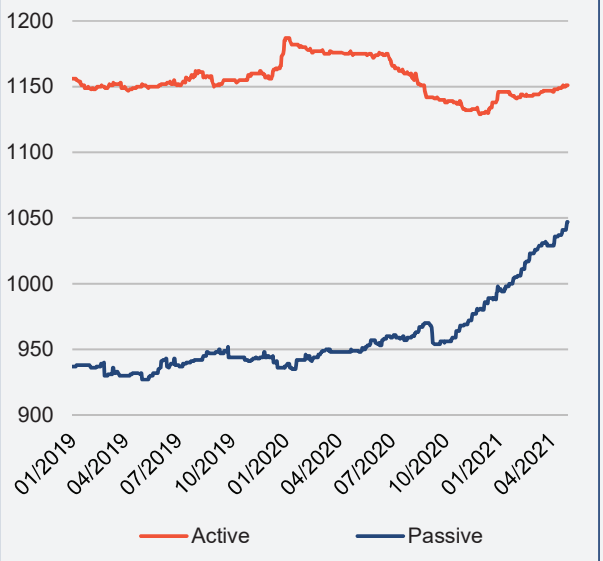
We find that during the sample period the growth in passive investment in funds that invest in Israel was much faster than the growth in passive investment in funds that invest abroad: while the value of active funds remained almost unchanged, the value of passive funds that invest abroad rose by 28 percent while the value of funds that invest in Israel rose by 49 percent. It should be remembered that the market value of the funds is affected by the inflow and outflow from the funds, the returns on the underlying assets and changes in the exchange rates (in funds that do not hedge foreign exchange risk) in the case of funds that invest abroad. However, an examination of inflows and outflows in these funds leads to a similar conclusion: there has been persistent growth in total investment in passive funds, with respect to both Israeli indices and foreign indices.

Figure 1
Market Value of Mutual Funds and Passive Investment as a Share of it over Time, 2019–April 2021 (daily data)



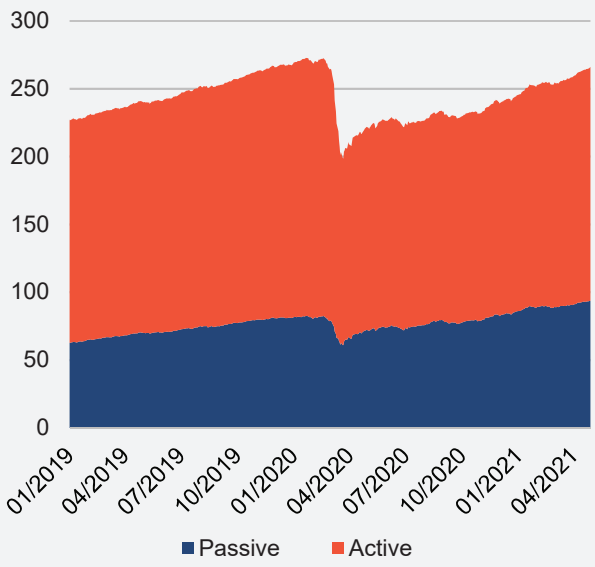
SOURCE: Based on Tel Aviv Stock Exchange data.

Figure 2
Mutual Funds in Israel by Fund Type, 2019–April 2021 (monthly data)



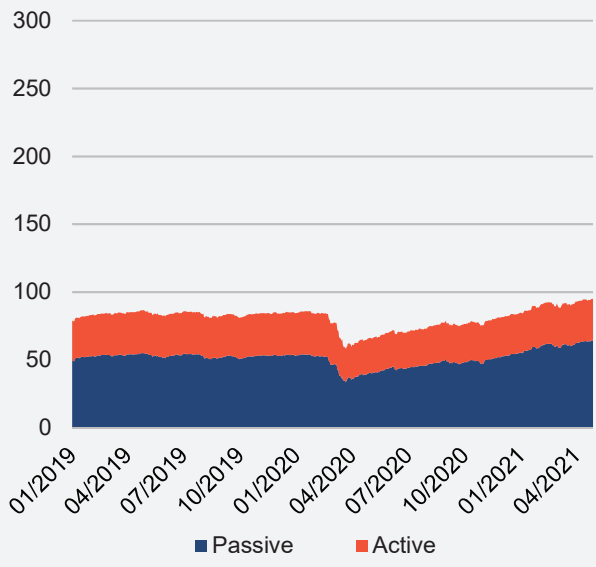
SOURCE: Based on Tel Aviv Stock Exchange data.

Figure 3a
Total Market value of Mutual Funds Invested in Israel, 2019–April 2021
(daily data, NIS billion)



SOURCE: Based on Tel Aviv Stock Exchange data.

Figure 3b
Total Market value of Mutual Funds Invested Abroad, 2019–April 2021
(daily data, NIS billion)



SOURCE: Based on Tel Aviv Stock Exchange data.

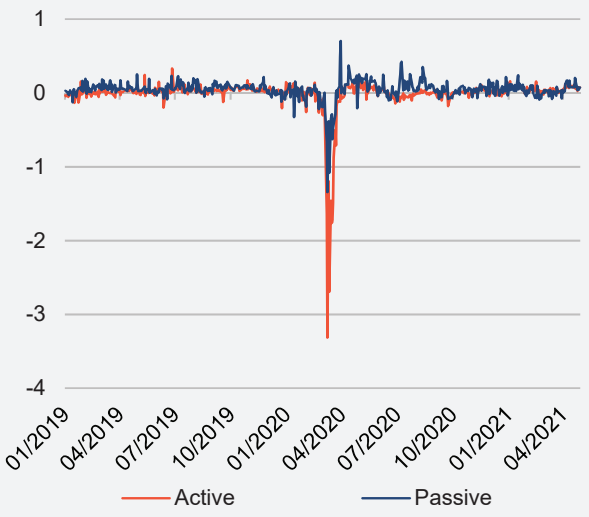
As can be seen in Figure 4, investors in active funds withdrew more money than investors in passive funds at the height of the COVID-19 crisis and they made a greater effort to time the market. Furthermore, it appears that the main inflows (relative to size) during the period subsequent to the peak of the crisis were in the passive funds. This finding holds for both funds investing in Israel and those investing abroad and this may be an indication of the character of passive investment, which by definition does not try to "beat the market" but rather to achieve the market return. An examination of the volatility of inflows and outflows of mutual funds that invest in Israel during the sample period shows that the standard deviation of the active funds is almost double that of the passive funds: 25 percent versus 13 percent.

A breakdown of investment in the closed-end funds shows a difference in the allocation of investors' assets between the funds that invest in Israel and those that invest abroad: while in the foreign funds the vast majority (about 97 percent) is invested in stocks, in Israel the breakdown is approximately equal between stocks and bonds. The breakdown of total passive investment, in both the open-end and closed-end funds, is similar to that in the funds invested abroad (Figure 5), while the breakdown in Israel is somewhat different: most of the investment is in the bond market, particularly in the case of open funds.

An examination of inflows and outflows for the mutual funds[3] (Figure 6) shows that most of the volatility during the crisis was in funds specializing in Israeli bonds, as described in detail in the Financial Stability Report for 2020. Especially noticeable is the fact that during the sample period, the total inflow in Israel was

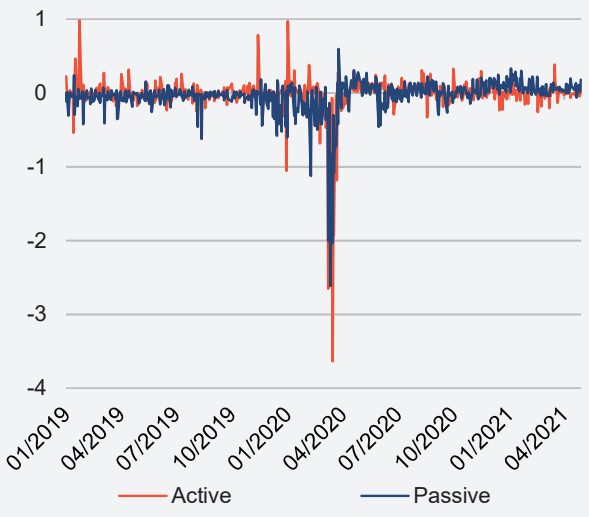
[3] This analysis relates only to funds that specialize in stocks or bonds and does not include mixed funds such as 90–10 or 80–20, which are common among the active funds.

Figure 4a
Net New Funds as a Share of Total Assets of Mutual Funds Specializing in Israel, 2019–April 2021 (daily data)



SOURCE: Based on Tel Aviv Stock Exchange data.

Figure 4b
Net New Funds as a Share of Total Assets of Mutual Funds Specializing Abroad, 2019–April 2021 (daily data)

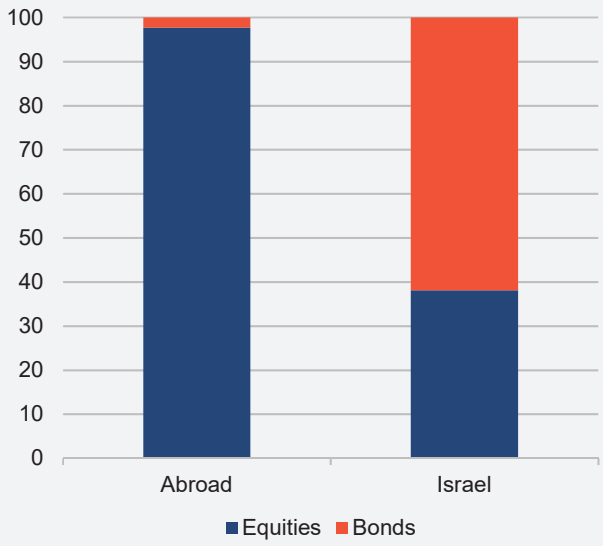


SOURCE: Based on Tel Aviv Stock Exchange data.

positive, in the case of both stocks and bonds, while in the funds invested abroad cumulative outflows were still larger than cumulative inflows. During the first half of the year, a significant increase in cumulative inflow can be seen in two channels: bonds in Israel and foreign equities, in which, as mentioned, passive investment is dominant. Here again, there is variation between tracking funds and managed funds in terms of inflows and outflows: the vast majority of outflows from funds specializing in bonds in Israel occurred in the active funds. The inflows and outflows in foreign equities are almost all by means of passive funds. In the case of equities in Israel, net inflows during the sample period were negative in the active funds and positive in the passive funds.

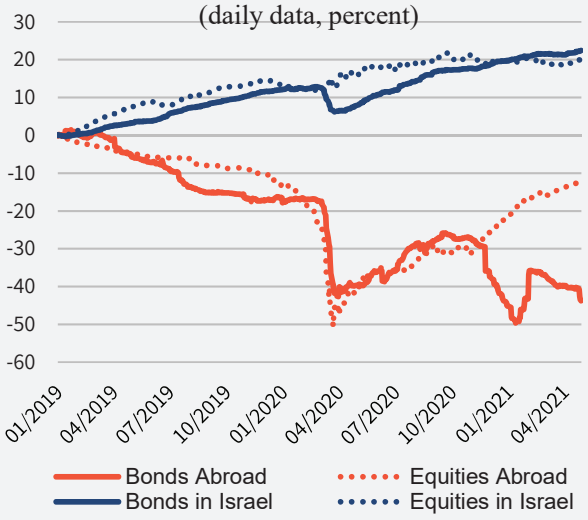
In the case of the Israeli stock market, it can be seen that the share of passive investment rose during the COVID-19 crisis, primarily as a result of the significant redemptions from the active funds. Figure 7 presents the increase in the comovement

Figure 5
Distribution of Passive Investments in Israel and Abroad by Asset Type, as of the end of April 2021 (percent)



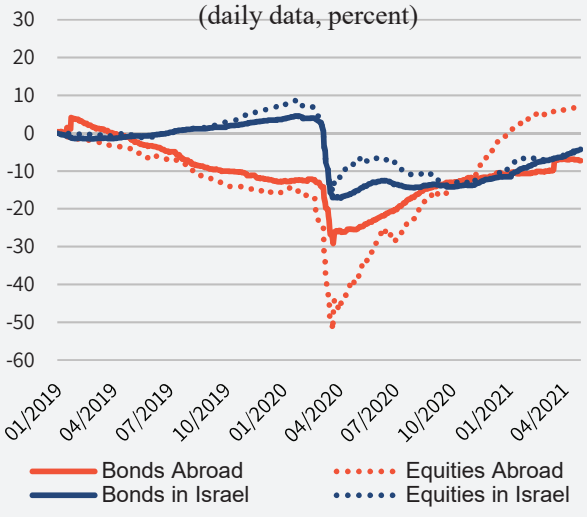
SOURCE: Based on Tel Aviv Stock Exchange data.

Figure 6a
Net Accumulated New Funds as a Share of The Fund's Total Assets in Passive Mutual Funds, Divided by Asset Type and Location, 2019–April 2021
(daily data, percent)



SOURCE: Based on Tel Aviv Stock Exchange data.

Figure 6b
Net Accumulated New Funds as a Share of The Fund's Total Assets in Active Mutual Funds, Divided by Asset Type and Location, 2019–April 2021
(daily data, percent)



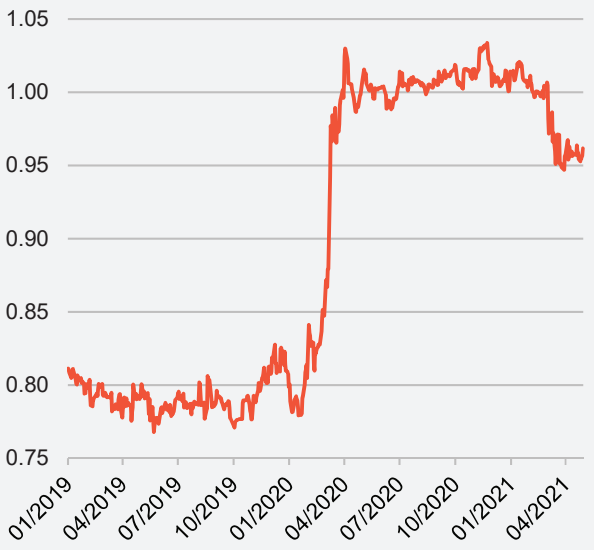
SOURCE: Based on Tel Aviv Stock Exchange data.

of stock returns and returns on the market portfolio, against the background of the increased share of passive investment. Thus, the betas of the stocks approach 1, as predicted by the literature. When the betas are increasing, the variance between stocks declines (convergence), as can be seen in Figure 8. The connection between the increase in the share of passive investment and the increase in the betas was found to be statistically significant at a level of 1 percent both in an OLS regression and according to a Granger causality test[4] (in one direction only), which is used to determine whether one variable precedes the other. Comovement can be measured by the standard deviation of the stocks' betas: the greater the comovement, the smaller the standard deviation will be. In view of the growth in passive investment, one might have expected the convergence of the betas to one, which would reflect a decline in the standard deviation over time. However, in contrast to what is described in the literature, and although the median and average betas approach 1, as can be seen in Figure 7, we do not find evidence of their convergence. Figure 8 shows that the comovement is declining over time.

In conclusion, we find that there was an increase in passive investment by means of mutual funds in all investment segments that we examined, namely stocks and bonds, in Israel and abroad. The share of investment in Israel within total passive investment in mutual funds has gradually risen and is currently about 60 percent. In addition to the mutual funds, the institutional investors are also creating numerous index-tracking instruments, such that pension savings can now be invested through passive channels. We did not find evidence that this risk has been realized during the sample period since we did not find that the comovement of stock returns has increased. Nonetheless, as the share of this type of investment grows,

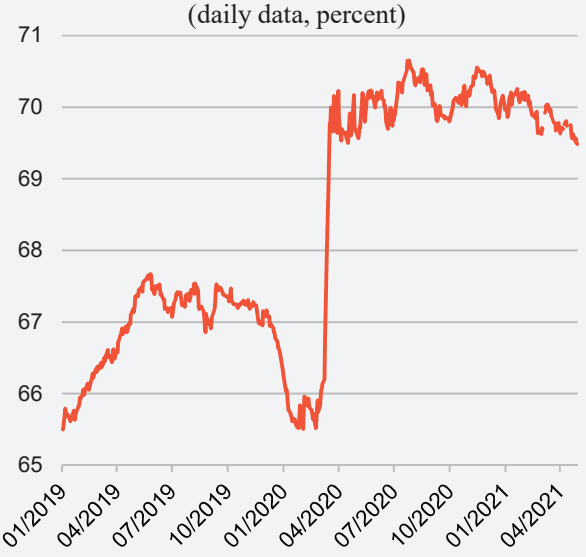
[4] The Granger causality test is a statistical test that considers the power of one time series to forecast another. A necessary condition for one variable to cause another is that it occurs first, a hypothesis that is tested using the Granger test.

Figure 7a
Median Beta of the 200 Largest Stocks, 2019–April 2021 (daily data)



SOURCE: Based on Tel Aviv Stock Exchange data.

Figure 7b
Passive Investments as a Share of Total Investments in Equities in Israel in the Mutual Fund Market, 2019–April 2021
(daily data, percent)

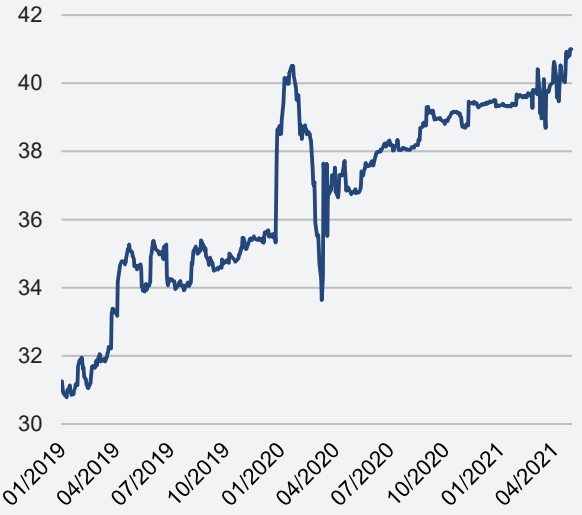


SOURCE: Based on Tel Aviv Stock Exchange data.

The beta is calculated according to the CAPM model as the ratio between the covariance of the equity and index returns and the index return, for a period of one year. The figure shows the median beta calculated on the 200 largest stocks as of January 1, 2019.

the risk of instability in the market in the case of a shock is liable to grow, due to comovement and pricing that is not based on the fundamentals of the underlying assets held by these funds.

Figure 8
Standard Deviation of the Betas*, the 200 Largest Stocks, 2019–April 2021
(daily data, percent)



* Calculated for a period of one year.
SOURCE: Based on Tel Aviv Stock Exchange data.

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