Chapter 4
Developments in the Business and Household Credit Markets

- The COVID-19 crisis was a major factor affecting private debt this year. In response to the effects of the crisis and in order to support the supply of credit, a number of measures were taken to encourage the provision of credit, including the creation of state-guaranteed loan funds, intervention in the bond market, easing of capital requirements in the banking system, monetary loans to encourage the providing of credit and the adoption of a program for deferral of debt payments. These measures successfully stabilized the markets, supported the supply of credit and reinforced economic activity.
- The crisis is likely to affect both the demand side (growth in demand for credit as a result of the need to finance current expenses while at the same time a reduction in demand as a result of high uncertainty) and the supply side (due to the possible increase in borrower risk and deterioration in the situation of lenders), and therefore it is difficult to disentangle the supply and demand effects.
- Business debt grew at a slow rate this year. Large businesses utilized their credit lines extensively at the beginning of the crisis, but eventually redeemed part of the additional debt. Small businesses obtained credit from the state-guaranteed funds (in addition to credit from the banking system). The interest rates on bank debt were stable this year.
- The private debt to GDP ratio rose, due to both the increase in household and business debt and the decline in GDP. The private debt to GDP ratio is still low relative to other countries.
- The beginning of the crisis was characterized by a withdrawal of savings from institutional investors. The extent of the withdrawals was dependent on the quality of the savings product. That is, the higher the tax benefits and the lower the level of liquidity, the lower was the rate of withdrawal. Thus, there were no anomalous withdrawals from the new pension funds during the entire period.
- During the first half of 2020, somewhat more than 9,000 businesses were officially closed. Relative to 2019, it appears that the revenue of some 70,000 other businesses—most of them in the trade and services industries—declined by at least 80 percent in August, and it appears that the risk of their closure has significantly increased. More than half of the businesses that recorded a drop of 80 percent or more in their turnover in August were micro businesses, such that the estimated effect of their closure on GDP, on the risk to the financial system and on the labor market is limited.
- Assistance to the business sector is a primary policy tool and a decisive factor in the attempt to maintain the functioning of the markets and business continuity during this period. Nonetheless, the across-the-board, prolonged and nonselective provision of grants and loans is liable to encourage the phenomenon of zombie firms[1], which are companiesthat have shown low performance over time but continue to operate in the market by rolling over their debt. The spread of this phenomenon, especially during the exit from the crisis, will have consequences for the recovery process, the allocation of financing sources and the economy's productivity.
- It was found that zombie firms (which according to estimates constitute on average about 7 percent of companies operating in the economy) is a recognized and long-observed phenomenon. It is to be found in many countries and does not constitute a major threat. However, it is worthwhile developing efficient and practical approval mechanisms in order to ensure that the support for business activity is channeled to industries that really need it.

[1] The term "zombie" came into wide use as a result of the crisis in Japan in the 1990s. The collapse of real estate prices and a long period of stagnation, as well the resulting drop in productivity, led to an increase in the number of zombie firms, the weakening of the banking system, and the contraction of investment in healthy companies (Banerjee and Hofmann, 2020; Giannetti and Simonov, 2013; Caballero, Hoshi, and Kashyap, 2008). For a repeat and updated discussion and background on the danger inherent in zombie firms, see numerous recent publications (2020) in the Economist, Financial Times, and by the BIS.

1. INTRODUCTION AND MAIN DEVELOPMENTS

This section analyzes the changes in the financing sources of the nonfinancial private sector (households and businesses) in Israel. The financing is used by households and the business sector for consumption and investment, which is the source of its importance to economic activity. The section describes the main changes that occurred in the economy's debt during 2020. The main event that affected debt this year is the COVID-19 crisis, which began early in the year and led to a significant contraction of economic activity and a resulting loss of income.

The dynamic of credit in the economy was disrupted on both the credit demand side and the credit supply side. The Bank of Israel and the government of Israel took multiple steps to stabilize the markets and support the provision of credit, including intervention in the bond market, the provision of monetary loans, a program for deferral of loan repayments and the creation of state-guaranteed loan funds.

On the demand for credit side, the crisis was expected to increase the demand for credit among businesses and households in order to finance their current expenses, but at the same time the high level of uncertainty was liable to reduce the demand for credit—by businesses whose need for working capital and for investment had declined and by households who had reduced their level of consumption. On the supply of credit side, the crisis was liable to reduce the supply of credit due to the potential increase in borrower risk (and deterioration in the situation of lenders). The Bank of Israel and the government took numerous steps to stabilize the markets and support the provision of credit, including intervention in the bond market, reduced capital requirements in the banking system, designated monetary loans in order to expand the supply of credit, creation of an infrastructure to expand the variety of assets that the banks can use as collateral against credit, easing of regulations, creation of state-guaranteed loan funds and creation of a program for the deferral of loan payments. In view of these steps, the bond issuance market recovered following its stagnation at the beginning of the crisis; businesses and households deferred loan repayments on a significant scale (although by January 2021, over 80 percent of them had already renewed their payments); and businesses (primarily small ones) turned to the state-guaranteed funds, among others, for credit, in addition to the banks. An analysis by industry, which is presented later in this Section, shows that the policy measures that supported the supply of credit contributed to the maintenance of economic activity.

The trend in debt was not uniform over the year. Large businesses obtained bank credit while small businesses took advantage of state-guaranteed loan funds. Households increased their housing debt while reducing their nonhousing debt.

Debt was characterized by a mixed trend this year. Large businesses utilized credit lines with the banks at a large scope at the start of the year, as did large businesses in other countries and during periods prior to the crisis. This was a manifestation of the high level of uncertainty regarding the continuation of the credit market's efficient functioning. At a later stage, when there was already less uncertainty, they redeemed the addition to their debt. Against the background of a decline in private consumption, households reduced their level of nonhousing debt, but continued to increase their housing debt at a relatively rapid pace. With the decline in GDP during the course of the year, the private debt to GDP ratio rose (a result of increases in both the household debt to GDP ratio and the business debt to GDP ratio). The interest rates on the debt of large and medium-sized companies remained relatively unchanged from the previous year while the interest rates on the debt of small businesses even dropped somewhat.

Box 4.1 analyzes the withdrawals of savings from institutional investors during 2020, primarily at the start of the COVID-19 crisis in March. It is found that the level

of withdrawals is dependent on the type of the savings product. Thus, to the extent that the product has greater tax benefits and a lower level of liquidity, the rate of withdrawal was lower. The rate of withdrawal from mutual funds in March was even higher than during the financial crisis of 2008, apparently and primarily due to the effect of shocks to the markets, which led to withdrawals from all of the investment channels. In contrast, there were no anomalous withdrawals from the new pension funds, but only a decline in deposits as a result of the lockdown. The provident funds and study funds, which showed a low rate of withdrawal, were characterized by a major shift to more conservative channels, which meant that investors did not benefit from the correction in the markets and had locked in their losses.

The private sector debt to GDP ratio rose. However, its level is low relative to other countries.

An examination of the main trends in the financing of the business sector is accompanied this year by an analysis of two important issues: (a) the scope of businesses closures in the economy during the COVID-19 crisis (Box 4.2); and (b) the danger in maintaining and encouraging the phenomenon of zombie firms—companies with low performance that are not managing to cover their debt servicing over the long run but continue to operate in the market thanks to "artificial resuscitation", while rolling over their debt (Box 4.3).

The main trends in the financing of the business sector were accompanied by two main phenomena this year: the volume of business closures in the economy during the COVID-19 crisis and the phenomenon of zombie firms—companies with low performance that continue to exist due to "artificial resuscitation" while rolling over their debt.

Identifying the scope of these two phenomena is particularly challenging this year, due to the difficulty in assessing the effects of the crisis on the business model and on the expectations of firms in the medium and long terms, and in defining their current legal status. The permanent closure of companies in excess of the trend due to the standard business cycle (which is reflected in the closure of about 40,000 to 50,000 business annually), the laying off of workers, the bankruptcy process, and payments to creditors are all liable to deepen the current recession and transform it into a longer-term downturn. In contrast, the financing of companies that are not sustainable can lead to the distortion of market mechanisms, the suboptimal allocation of resources and financial assistance, and an adverse effect on the recovery efforts and productivity in the long term.[2]

According to the reports of the Israel Tax Authority for the first half of 2020, about 9,000 businesses were officially closed, which represents about 33 percent less than the figure for the parallel period in the previous year. Box 4.2 is based on the decline in turnover during the months July–August, during which there were only modest restrictions on movement in most industries. It presents an estimate of the number of businesses whose situation worsened significantly, although they did not officially close, such that their risk of closure increased substantially. According to this estimate, about 70,000 businesses—most of them in the trade and services

[2] The term "zombie" came into wide use as a result of the crisis in Japan in the 1990s. The collapse of real estate prices and a long period of stagnation, as well the resulting drop in productivity, led to an increase in the number of zombie firms, the weakening of the banking system, and the contraction of investment in healthy companies (Banerjee and Hofmann, 2020; Giannetti and Simonov, 2013; Caballero, Hoshi, and Kashyap, 2008). For a repeat and updated discussion and background on the danger inherent in zombie firms, see numerous recent publications (2020) in the Economist, Financial Times, and by the BIS.

About 80,000 businesses had their operations interrupted or reduced by at least 80 percent. Most of them are micro businesses, such that the estimated effect of their closure on GDP, on the risk to the financial system, and on the labor market is limited.

industries—experienced a drop in turnover of 80 percent or more during July–August 2020 relative to the same period in 2019. About 60 percent of the businesses for which the risk of closure appears to have increased are micro businesses with annual revenue of up to NIS 300,000. The aggregate turnover of these businesses is estimated to be only about NIS 5 billion, which reflects their relatively unimportant contribution to GDP, as well as the limited credit risk to the financial system as a result of their closure. With respect to the effect on the labor market, it is estimated that a high proportion of micro businesses whose risk of closure increased are self-employed individuals who do not have any employees.

Against this background, and despite the not insignificant harm to the life cycle of companies, the efforts of the central banks and governments to mitigate the destructive effects of the COVID-19 crisis by means of assistance programs to the business sector constituted an important policy tool, and were a decisive factor in the attempt to maintain the functioning of the markets and support business continuity. However, these efforts also raised the tax burden and, as a result of their nonselective distribution, are liable to create a moral hazard. This is due to the absence of an efficient approval mechanism with a goal of ensuring that assistance is primarily provided to companies that genuinely need it. In other words, the nondiscriminatory policy measures that were adopted in order to support business activity raise concerns that zombie firms, namely unsustainable companies, are being kept alive and nurtured.

The phenomenon of zombie companies in Israel prior to the crisis (which is estimated to include about 7 percent of active companies in the economy—a level that is not exceptional relative to other countries) is a recognized and relatively stable phenomenon that does not constitute a large-scale threat. Moreover, due to the nature of the crisis, many companies that are currently classified as zombies are actually sustainable businesses that are experiencing a temporary liquidity shock due to the restrictions that led to a collapse in aggregate demand.

The intensity of the current shock requires broad intervention in order to prevent a worsening of financial distress in the economy—so the intervention is essentially a compromise between maintaining the functioning of the economy and the risk in continuing to finance companies that are in long-term distress and are not able to cover their debt service expenditure. However, decision makers must make difficult decisions according to guiding principles, which include reducing nondiscriminatory support of businesses in favor of focused support for industries and companies that have a relatively high potential for sustainability; limiting support only to industries in which there is solid evidence of market failure; strengthening the capital structure of companies and conditioning assistance on that basis; and also continuing to strengthen the mechanisms for bankruptcy and economic rehabilitation.

2. DEVELOPMENTS IN BUSINESS DEBT

a. Bank debt

Analyzing business debt to banks shows a difference in the effect of the COVID-19 crisis on large and small businesses. The former significantly increased their level of debt at the beginning of the crisis—apparently by extensively utilizing their credit lines—and later on in the crisis they redeemed the additional debt (Figure 4.2), such that over the course of the year their total debt grew at a low rate. This pattern may constitute evidence that large businesses did not experience any credit shortage but rather took on debt early on in response to the crisis. This pattern characterized large businesses in other countries at the start of the crisis and is evidence of their level of uncertainty at the start of the crisis as to the ability of the market to continue meeting the demand for credit as the crisis continued. The decline in the utilization of these credit lines over time points to a decline in uncertainty, in view of the fact that the banks and the capital markets continued to operate normally.

An analysis by industry shows that the industries characterized by high growth in their level of debt during 2020 included hotels and restaurants (which were closed during the pandemic and therefore took on debt in order to finance their current expenses) and real estate and construction (in which activity continued at a significant pace). The construction industry was exempted from the restrictions on activity and moreover, in order to support its activity in meeting the needs of the economy during the COVID-19 crisis and following it, the Banking Supervision Department even raised the industry credit limit that appliesto it.[3] This step made it possible to decouple the growth rate in credit to the construction industry from that of total bank credit to businesses. The industries that reduced their debt include manufacturing and financial services, including the regulated credit providers that provide nonbank credit to small businesses and households. As described below, regulated credit providers were particularly affected by the COVID-19 crisis, and the scope of credit that that they provide dropped sharply, partly due to the problem of raising capital and increased customer risk.

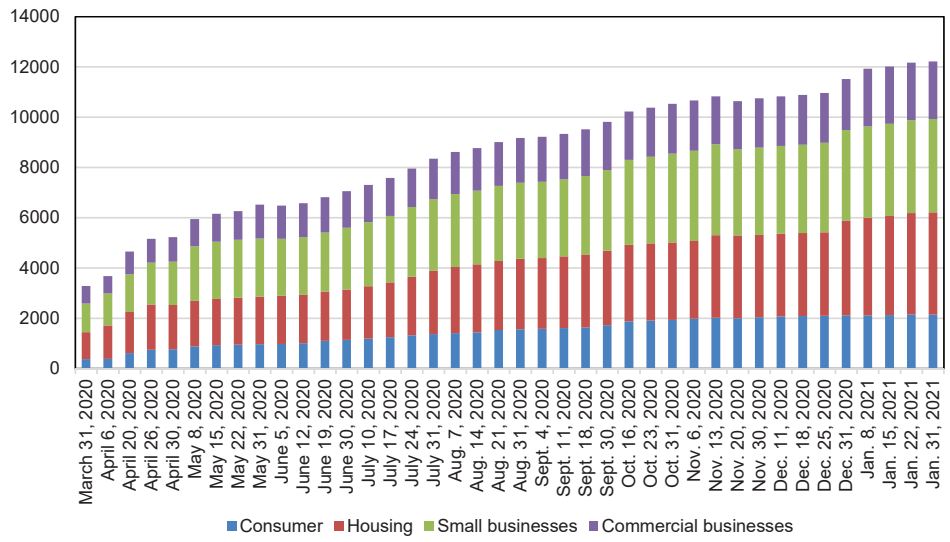
Small businesses apparently found it difficult to obtain credit from the banks at the start of the crisis. In March, designated funds were created that provide state guarantees for bank credit to small businesses in order to mitigate the credit shortage. (For further details, see the section on state-guaranteed funds.) In parallel, the Bank of Israel initiated monetary programs for expanding the supply of credit to businesses. An industry analysis shows that the trade and manufacturing industries received a higher proportion of credit from these funds than their proportion of total bank credit.

Small businesses also took part in the program for payment deferral (see Figure 4.1) instituted by the Banking Supervision Department as part of the measures to deal with the COVID-19 crisis. The total volume of credit to small businesses for which

[3] https://www.boi.org.il/en/NewsAndPublications/PressReleases/Pages/7-12-2020.aspx

payments were deferred reached a peak of about one-quarter of the total credit to this industry; however, by the end of the year payments were renewed on about two-thirds of the deferred credit (and on about 80 percent by January 2021).

Figure 4.1
Balance of Deferred Payments (NIS milion)



SOURCE: Company reports to the Banking Supervision Department.

Large businesses obtained credit from the banks while small businesses took advantage of the State-guaranteed loan funds. Interest rates for both large and small businesses remained stable.

Credit to small businesses grew at a slow rate (1 percent during the first three quarters of 2020). An examination of the difficulty in obtaining credit classified by business size shows that small (and medium-sized) businesses found it difficult to obtain bank credit (Figure 4.3). The credit they did obtain came primarily from the state-guaranteed funds.[4] Bank credit was primarily channeled to large businesses, and during the first three quarters of the year bank credit to these businesses grew by 9 percent. Total bank credit to businesses grew this year by NIS 28 billion, which represents a growth rate of about 6.2 percent (compared to 6.4 percent in 2018 and 4.6 percent in 2019).

4 Further details on the State-guaranteed funds are provided below.

Table 4.1

The business sector's fundraising channels[a]

	Balances, end of period, NIS billion					Change in balance during the period, percent[b]				
	12-2019	12-2020	6-2020	9-2020	12-2020	2019	2020	2020:Q2	2020:Q3	2020:Q4
1. Loans from the banks[c]	459	487	470	468	487	4.6%	6.2%	-1.5%	-0.6%	4.1%
2. Tradable bonds in Israel	205	212	208	212	212	0.1%	3.8%	1.9%	2.0%	0.2%
3. Nontradable bonds and nonbank loans[d]	116	112	112	109	112	8.0%	-3.0%	-0.7%	-2.2%	2.9%
of which : Loans from institutional investors	87	86	84	82	86	11.2%	-0.5%	1.5%	-2.7%	5.7%
4. Debt raised abroad[e]	183	174	164	174	174	4.9%	-4.8%	-6.3%	6.4%	0.0%
of which : Loans from nonresidents	156	139	138	138	139	7.2%	-10.9%	-6.9%	-0.2%	0.5%
Bonds	27	35	25	36	35	-7.0%	30.5%	-3.0%	42.5%	-1.7%
Total business sector debt	**962**	**986**	**953**	**963**	**986**	**4.1%**	**2.5%**	**-1.5%**	**1.0%**	**2.4%**

[a] Excluding banks and insurance companies.

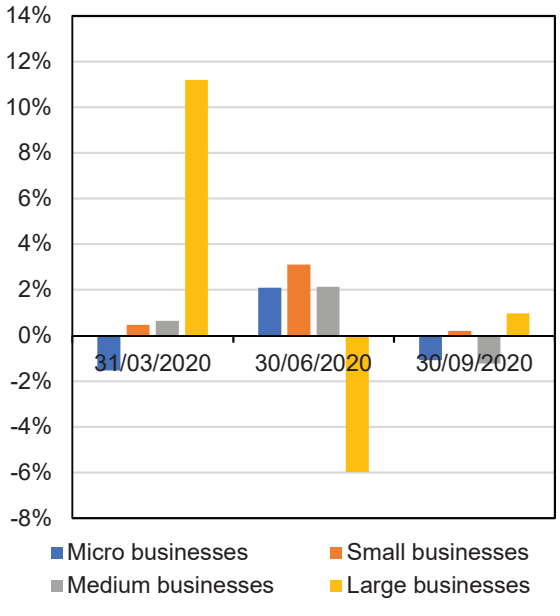
[b] In the current year, the change is from the beginning of the year.

[c] Loans from the banks are shown before doubtful debt provisions (based on solo data, Israeli residents only). Bond balances are shown by adjusted par value (capital registered for trading plus indexation differentials and interest not yet paid).

[d] Comprised of loans from institutional investors and credit card companies. Until August 2103, the mortgage-backed loans from institutional investors item was attached to household debt.

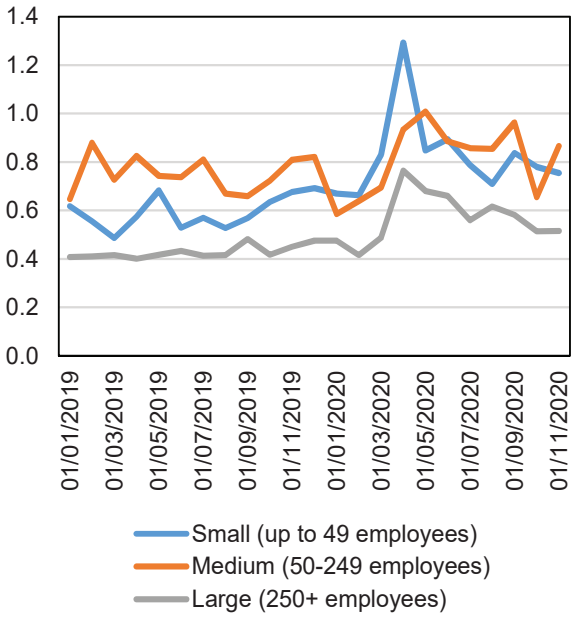
[e] Including holdings of Israeli corporate bonds abroad and loans from abroad.

Figure 4.2
Rates of Change (Quarterly) in Bank Credit, by Size



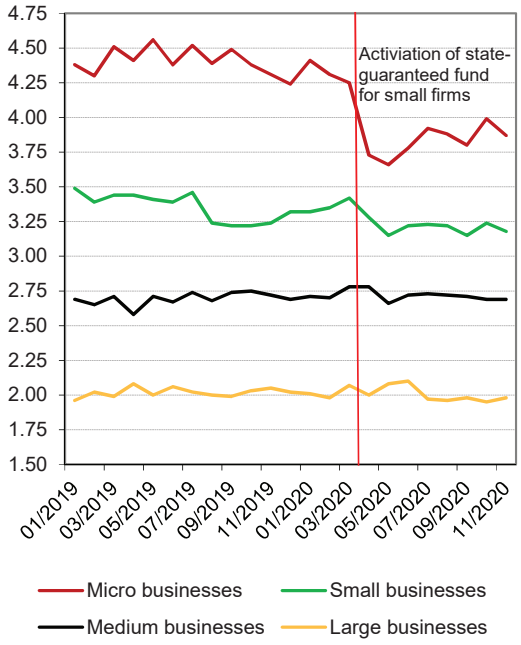
SOURCE: Bank of Israel.

Figure 4.3
Average Difficulty in Raising Credit, by Firm Size (scale of 0-3)



SOURCE: Bank of Israel.

Figure 4.4
Interest Rate on New Credit Given to Micro, Small, Medium, and Large Companies in the Unindexed Nominal Segment (percent)



SOURCE: Bank of Israel.

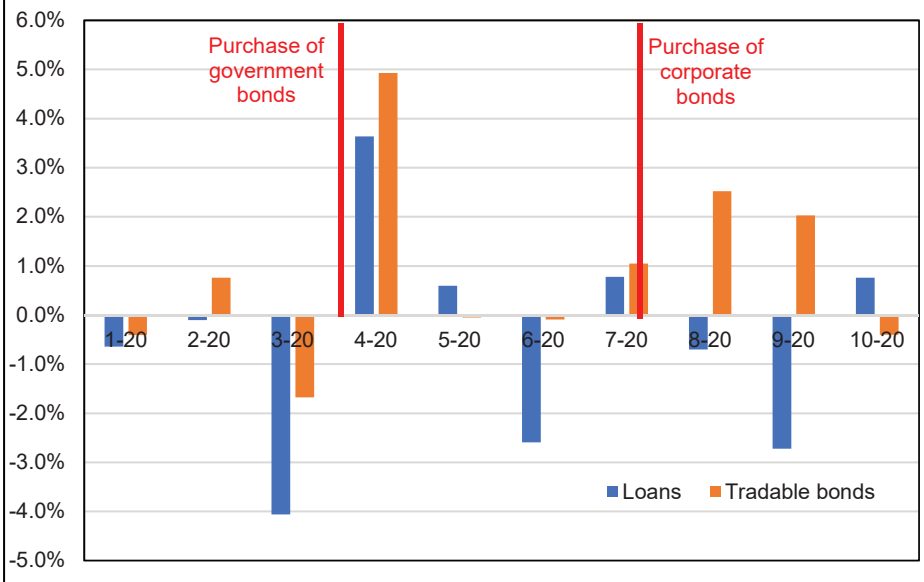
b. Nonbank debt

The Bank of Israel intervened in the markets on a significant scale, purchasing government bonds and later on corporate bonds, with the goal of providing liquidity to the markets and stabilizing them.

Nonbank (business) credit is for the most part obtained from institutional investors and foreign residents. (An additional, though small, component is obtained from regulated credit providers and credit card companies.) At the beginning of the crisis in March, the institutional investors had to deal with liquidity problems and high levels of withdrawals from the mutual funds. The Bank of Israel took a number of steps (which are described in Chapter 3 of this report), including the launch of a program to purchase government bonds (on a scale of NIS 50 billion, which was subsequently expanded by an additional NIS 35 billion); the provision of dollar liquidity by means of swap transactions in March; and a program to purchase corporate bonds (on a scale of NIS 15 billion) at the beginning of July. The Bank of Israel's activity contributed to stabilizing the markets. Bond-market yields, which rose sharply at the beginning of the crisis, began to decline after the launch of the program to purchase government bonds, and following the Bank of Israel's declaration of its intention to purchase corporate bonds they reached levels similar to those prior to the crisis. As a result of the stabilization of the markets, institutional investors again began providing credit.

Total debt to institutional investors grew slowly this year, but its composition changed over the course of the year. In previous years, the institutional investors preferred to provide credit by means of direct loans rather than tradable bonds, which was reflected in the higher rate of growth in direct loans. This year, in view of the crisis and the Bank of Israel's measures of support, this trend was reversed. While total debt to institutional investors by way of private loans declined, the balance of total tradable bonds grew rapidly. It appears that the growth in corporate bond activity followed the announcement by the Bank of Israel in July 2020 of its intention to purchase corporate bonds in order to support the market. The preference for tradable bonds over loans during the COVID-19 crisis characterized a number of countries around the world, and this may be related to measures taken by their central banks in order to support the financial markets.[5] In Israel, the phenomenon was reflected in credit provided by institutional investors and nonresidents, against the background of the Bank of Israel's supportive measures in the bond market, which were similar to those of other central banks.

Figure 4.5
Credit from Institutional Investors by Instrument (rates of change)



SOURCE: Bank of Israel.

[5] T. Goel and J. Garralda (2020), "Bonds and Syndicated Loans During the COVID-19 Crisis: Decoupled Again", *BIS Bulletin*, April.

The public's savings grew significantly, which was reflected in increased deposits at the expense of equities and bonds.

The crisis also impacted on the public's long-term savings, as reflected in the changes in the composition of its asset portfolio. As a result of the volatility in asset prices, the share of bank deposits within the portfolio increased significantly, while the proportion of shares and domestic bonds declined. The proportion of the portfolio managed by institutional investors shrank somewhat, thus halting the upward trend that had prevailed in previous years.[6]

c. The bond market—nonbank tradable debt

The COVID-19 crisis was manifested in the bond market by a sharp decline in prices (an increase in the spread between corporate bonds and government bonds), which began at the end of February. This derived from, among other things, the large-scale sales by mutual funds in order to obtain liquidity. At their peak, spreads reached levels similar to those observed during the European debt crisis in 2011 (though they were still less than the levels observed during the 2008–09 crisis). In March, the increased spreads on the higher-rated bonds began to fall while those on lower-rated bonds remained high and began to fall only later in the year, such that the disparity in spreads between the ratings widened during the period. The increase in spreads on lower-rated bonds during the period was liable to exacerbate the problem of issuing in the primary market, as will be discussed below.

As part of the response to the COVID-19 crisis, the Bank of Israel adopted a number of policy measures in order to provide liquidity and to stabilize the financial markets. (For further details, see Box 3 in the Financial Stability Report for the first half of 2020.) In March 2020, the Bank of Israel launched a program to acquire government bonds and to carry out dollar swaps with institutional investors; at a later stage (at the beginning of July 2020), it even declared that it would implement a program for the purchase of corporate bonds. As a result of the purchase of government bonds and the provision of dollar liquidity, spreads at the higher ratings began to decline, while those at the lower ratings fell only after the intervention by the Bank of Israel in the corporate bond market at a later stage.

In the primary market, issues dropped sharply at the onset of the crisis (in March), but recovered later on. Nonfinancial companies issued bonds on a similar scale as in previous years, while the banks and the insurance companies cut back their issues significantly. Overall, about NIS 52 billion (NIS 41 billion without the banks and insurance companies) was raised as opposed to NIS 62 billion (NIS 44 billion without the banks and insurance companies) on average during the previous three years. An examination of net issues (total issues less redemptions of principal) showed that those of manufacturing companies in 2020 were higher by NIS 1.5 billion than the average for the previousthree years; in contrast, net issues of the financial companies were lower by about NIS 18 billion than the average for the previous three years.

[6] For further details on the changes in the public's asset portfolio, see *Statistical Bulletin*, 2020.

The issues were concentrated primarily at the higher ratings while the issues at the lower ratings declined. The proportion of AA- and higher ratings reached 58 percent in 2020 (compared to an average of 46.8 percent during the previous three years), while the proportion of ratings between A- and A+ reached 38 percent (compared to an average of 33 percent during the previous three years). It appears therefore that the bond market functioned well at the higher ratings and the issues in that segment rose while spreads were maintained at close to their precrisis levels, which indicates that there was no difficulty in issuing bonds. In contrast, at the lower ratings there was a decline in issues, which was accompanied by an increase in spreads, a signal of a somewhat limited supply of credit and perhaps that poorly performing companies in the economy were experiencing a problem in obtaining credit. It appears that this is part of a broader phenomenon in which risk aversion increases during a crisis, wherein credit is allocated more to low-risk businesses (public companies with a high rating) and lessto small companies and lower-rated public companies.

In an analysis by industry, those same industries that obtained loans from the banks also went to the corporate bond market to issue debt in the form of bonds. The most prominent examples with respect to the amount of capital raised relative to previous years are real estate and, to a lesser extent, manufacturing. The industry that raised the least relative to previous years (apart from finance, the banks, and the insurance companies) was trade and services. As described in Box 2.1 of Chapter 2 in this report, the real estate and manufacturing industries were less affected than other industries. At the same time, the trade and services industry was more affected, as a significant part of its activity is customer-oriented leading to a greater impact of the restrictions imposed. Also from the viewpoint of net issues, the industries that were prominent in raising capital at a higher rate than the average for the previous three years were real estate and construction and, to a lesser extent, manufacturing and trade and services. In contrast, the oil and gas industry and the investment industry raised lessthan during the previous three years.

d. The equity market

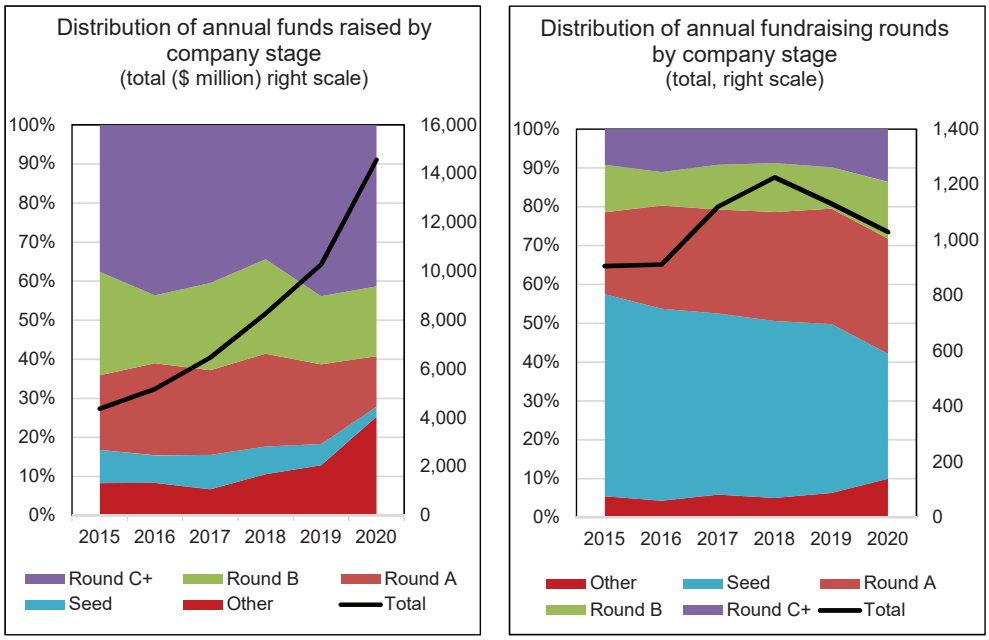
The number of initial offerings reached its highest level in the past decade. The level of capital raised by the high-tech sector, by way of both the stock market and the venture capital funds, was particularly high.

Equity market issues were affected by the crisis in a similar manner to bond market issues. Total issues dropped sharply between March and May, and recovered subsequently. With regard to the total amount issued, capital raised in 2020 was significantly higher than in 2019, totaling about NIS 12 billion (an increase of 43 percent relative to 2019). The year was also characterized by a record number of IPOs: 26 issues (the largest number since 2008), in which about NIS 4.5 billion was raised. Most of the issues (95 percent of the amount raised) were by means of book building—a nonuniform offer to institutional investors—a new method adopted by the TASE in 2019 (in that year, 29 percent of total IPOs used this method). In May 2019, the TASE published new directives that made it possible to issue participation units in R&D partnerships, and four such partnerships were listed for trade during the second half of 2020. Eighteen out of 26 companies who carried out new issues were

from the high-tech industry. This industry, which is characterized by an ability to operate remotely, and which enjoyed growing demand for its products, grew during the COVID-19 crisis. The issues in the technology industry totaled NIS 4.7 billion this year (including NIS 1.7 billion raised abroad). The capital flows, together with the surplus in the current account and the increased purchases of financial assets by foreign buyers when Israel was included in the WGBI, contributed to the appreciation of the shekel, as described in Chapters 2 and 3 of this report.

This was a record year in terms of venture capital raised by Israeli high-tech companies (Figure 4.6, right panel). However, total capital raised and the number of capital-raising rounds by companies in the Round A and seed stages declined this year, with the largest drop being recorded in the financing of startup companies in the seed stage (a 35 percent drop in the amount raised and a 33 percent drop in the number of issues). The reason for this is apparently that in order to avoid additional risk the funds are channeling their investments to companies in which they have previously invested, with the goal of helping the firms weather the crisis. The increase in the financing of companies in more advanced stages and the drop in financing of young companies are consistent with the picture that emerges from Box 2.2, according to which there was a relatively limited adverse impact on high-tech companies in Israel this year, while the primary effect was focused on small companies. Furthermore, there was a downward trend in the number of issues in each quarter during the course

Figure 4.6
Distribution of Annual Funds Raised in the Venture Capital Industry



SOURCE: Based on IVC and SNC.

of the year, together with an increase in the amounts raised. This trend points to a recovery in the level of capital raised toward the end of the year but also a decline in the number of companies that are seeking financing. In view of the COVID-19 crisis, the government took special measures in the high-tech industry, particularly the provision of guarantees to domestic investment funds. This measure was focused on companies in relatively late stages of their lifecycle, and therefore did not provide a solution to companies in earlier stages. If the trend in the markets returns to what it was in recent years, it appears that the financing of startup companies in 2020 will not be adversely affected. In contrast, if the financing trends of 2020 continue, the lack of financing during the early stages of the lifecycle is liable to adversely affect the development of startup companies in coming years. At the same time, the increase in the amounts being raised may help startup companies develop and expand their activity. For further details on the financing of high-tech companies and the measures taken by the government this year, see the Bank of Israel *Annual Report* for 2019, which discusses the financing characteristics of high-tech companies in Israel.

1. Regulated credit providers

Other entities that provide nonbank credit include the regulated credit providers, which supply credit primarily to small businesses. (For further details, see the *Financial Stability Report* for the second half of 2020.) In recent years, there has been significant growth in the amount of credit they provide (at an average annual rate of 38 percent during the past four years), and prior to the crisis they provided credit totaling NIS 5.6 billion (which is a negligible proportion of total credit).[7]

Regulated credit providers were adversely affected by the crisis, and they reduced their supply of credit to small businesses and households. In contrast to loans from other credit providers, the interest rate on credit from these lenders increased.

Regulated credit providers were hard-hit by the COVID-19 crisis, and the total credit they provided declined sharply (by NIS 1.2 billion or about 28 percent in annual terms). This is apparently due to the difficulty in obtaining financing[8] as a result of the sharp declines in the raising of capital by the financial industry in general, by way of both the banks and bond issues. Figure 4.7 presents the interest rates according to the various types of lenders on the basis of an analysis of the Central Credit Register, which begin operating in 2019 (and includes information on households and licensed businesses). It shows that among the regulated credit providers, in contrast to the banks and the credit card companies, interest rates rose during 2020 (sharply at the beginning of the crisis with some correction subsequently). The combination of a contraction in credit and an increase in interest rates serves as an indication of a contraction in supply, on the condition that the composition of borrowers has not changed since that can affect the interest rate.

7 The data only relate to public companies in the industry that publish financial statements.
8 For further details, see the *Financial Stability Report* for the second half of 2020.

An analysis carried out by the Bank of Israel (see the Committee for Examining Competition in the Credit Market) found that a change in the composition of borrowers does not explain the entire change in the interest rate. This finding, together with the increased difficulty in obtaining financing among regulated credit providers, indicates that the supply of credit they provide has been adversely affected.

In December 2020, the Bank of Israel announced that it would carry out repo transactions with the regulated credit providers in order to increase the supply of credit to small and micro businesses through regulated nonbank entities as well. This measure is meant to encourage competition and to strengthen the ability of the regulated credit providers to provide attractive credit to their customers by reducing the cost of their sources of financing. This program offers regulated credit providers a cheap source of credit in order to support small businesses. As part of the repo transactions, the Bank of Israel will accept tradable collateral from them, including government bonds, *makam*[9], and corporate bonds, according to specific criteria.

3. HOUSEHOLD DEBT

Total household debt (housing and nonhousing) reached NIS 612 billion in 2020, an increase of NIS 24 billion or 4.1 percent, which is slightly lower than in previous years (5.5 percent in 2019 and 5.3 percent in 2018). The household debt to GDP ratio stood at 43.7 percent in 2020 (compared to 41.8 percent in 2019). The trend in the components of household debt varied during and as a result of the crisis. Thus, housing debt continued to grow at a high rate despite the crisis. (For further details, see the *Financial Stability Report* for the second half of 2020). It grew without any increase in interest rates, implying that demand was met by supply and there is no indication of a credit shortage in this segment. In contrast, nonhousing debt fell together with interest rates, and it therefore appears that it was characterized by a drop in demand. Apparently due to the lockdown and the restrictions imposed, there was a contraction in private consumption, together with a lower need for consumer credit. As further evidence of the drop in demand for nonhousing credit, there was an increase in checking account deposits by the public, alongside a decline in overdrafts and a large increase in the rate of private savings (see Chapter 2).

a. Housing debt

Housing debt is primarily owed to the banks (a negligible proportion is obtained from institutional investors). Total housing debt owed to the banks grew by 9 percent in 2020 (an increase of NIS 33 billion), a high rate relative to previous years (7.5 percent in 2019 and 7 percent in 2018). The downward trend in interest rates on mortgages continued at the beginning of the year, but they rose in March–April, and subsequently—as a result of monetary policy measures—they again dropped in most

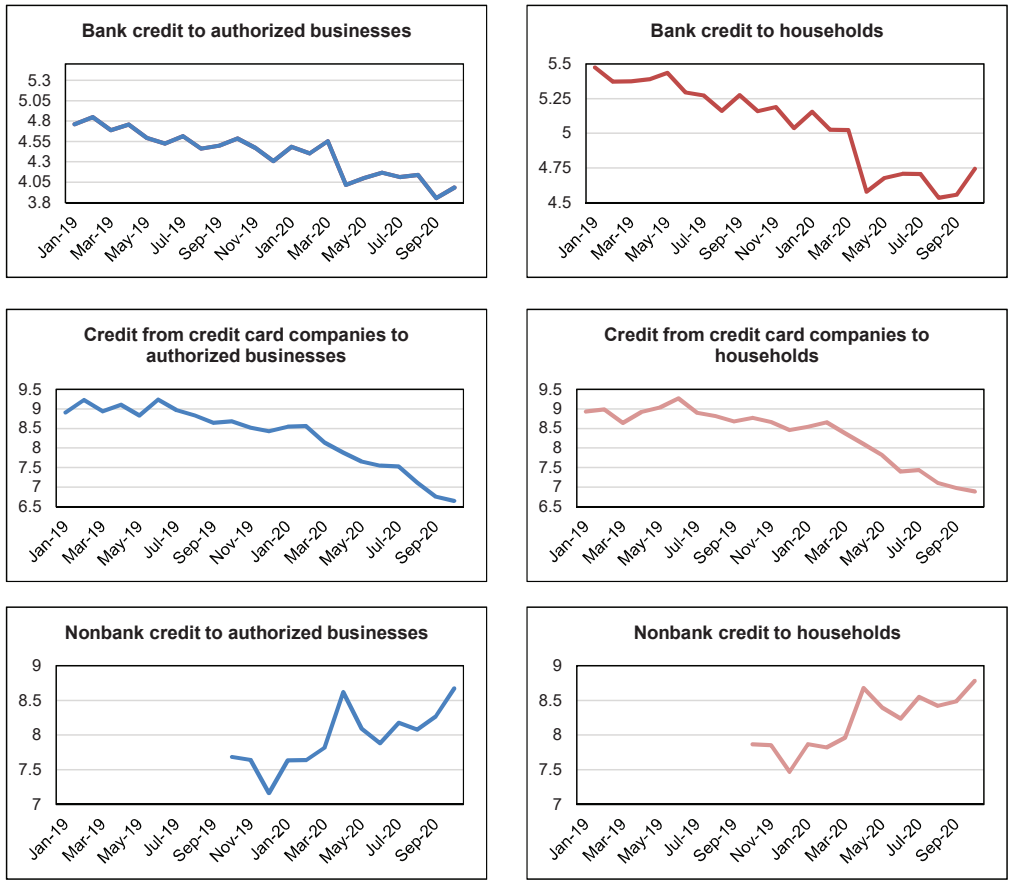
[9] Short-term bills issued by Bank of Israel.

of the mortgage tracks to precrisis levels. As a result of the low interest rates, the increase in total new mortgages in 2020 was NIS 70 billion (approximately 15 percent higher than in 2019 and 17 percent higher than in 2018; for an analysis of the mix of mortgages, see the *Financial Stability Report* for the second half of 2020).

b. Nonhousing debt

Household consumer debt is obtained primarily from the banks (78 percent), from the institutional investors (10.5 percent), from the credit card companies (7.8 percent), and from regulated credit providers (2.1 percent).[10] An examination of the sources of this debt shows that in 2020 bank debt declined by 5 percent and debt to credit card companies declined by 4 percent, while the debt to institutional investors continued to

Figure 4.7
Interest Rates on Credit to Authorized Businesses and Nonhousing Credit to Households, by Lender



SOURCE: Central Credit Register, Bank of Israel.

[10] The remainder is provided by the government.

grow, although at a low rate relative to previous years (7 percent in 2020 as opposed to an average of 25 percent during the previous three years). An examination of the interest rates shows that the interest rates on bank credit and credit from the credit card companies have been declining since the start of 2019, and the fall in total debt alongside the decline in the interest rates may indicate a drop in demand for consumer debt from the banks and from the credit card companies. Another explanation may be a change in the composition of borrowers, namely the shift of riskier borrowers to other sources of credit. However, an examination carried out by the Bank of Israel found that the change in the composition of borrowers does not explain the entire change in the interest rate. (For further details see the Report of the Committee on Enhancing Competition in the Economy.)

c. The state-guaranteed loan funds[11]

As part of the steps to cope with the crisis, state-guaranteed loan funds were established. The most active of them, in terms of both number of requests and supply of credit, wasthe fund for small and medium-sized businesses.

As part of the measures in response to the COVID-19 crisis, the State provided guarantees for loans to the business sector with the goal of increasing the supply of credit to businesses and enabling them to meet their liquidity requirements. The loans were provided by designated funds, through seven banks and three nonbank institutions. Funds were established that were geared toward large businesses; small and medium-sized businesses; and loans to higher-risk small and medium-sized businesses.

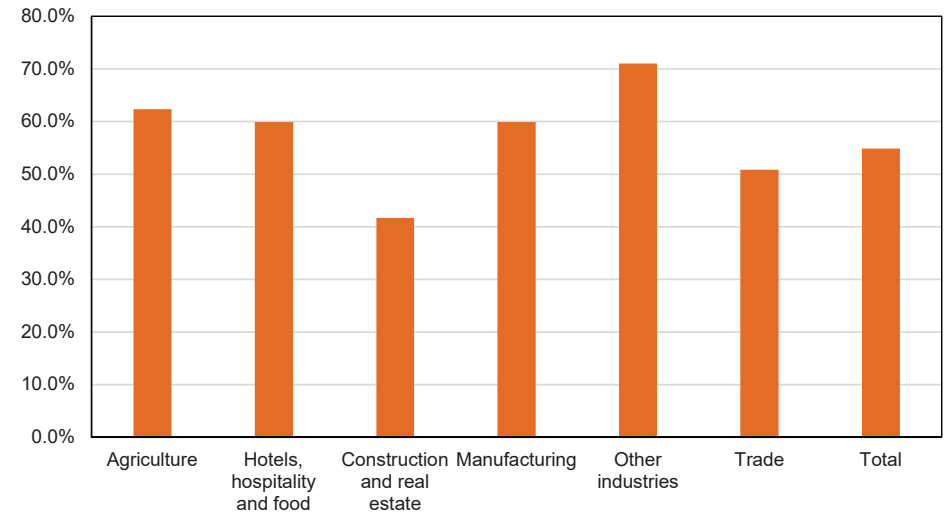
The largest of the funds is the **Fund for Small and Medium-Sized Businesses on the regular track,** which carried an aggregate guarantee of 15 percent. The ceiling on the fund was expanded a number of times during 2020, and reached a level of NIS 36 billion. The fund approved 58,314 requests (which constitute about 62 percent of total handled requests) totaling about NIS 20 billion (which constitutes about 31 percent of the total amount requested). It should be noted that while small businesses received a total of NIS 20 billion in credit from the fund, total bank credit grew by only about NIS 1.5 billion. Due to the low interest rates and the easy credit terms that characterize the fund, this finding may indicate that part of the credit was used in order to refinance debt rather to support business activity. A similar phenomenon was found in an analysis carried out by the ECB.[12]

Figure 4.8 shows that the industries most adversely affected by the crisis (trade and hotels) received a higher proportion of the credit that they requested than other industries (construction and real estate). This implies that the assistance was indeed focused on the hardest-hit industries. Figure 4.9 presents the each industry's share of the total credit provided by the fund. The trade industry clearly has the highest proportion (about 30 percent). All of the industries that submitted requests to the fund

[11] The data in this section are for the end of 2020.
[12] https//:www.ecb.europa.eu/pub/economic-bulletin/focus/2020/html/ecb.ebbox202006_07~5a3b3d1f8f.en.html

(apart from the real estate and construction industry; Figure 4.9)[13] received credit beyond their share in the distribution of total credit, with a particularly large difference in the trade and hotel industries, which were the most affected by the crisis. This finding may also imply that in these industries the share of credit that was intended to deal the economic downturn rather than to refinance debt was higher than for other industries.

Figure 4.8
Credit Actually Issued as a Share of Requests (percent)



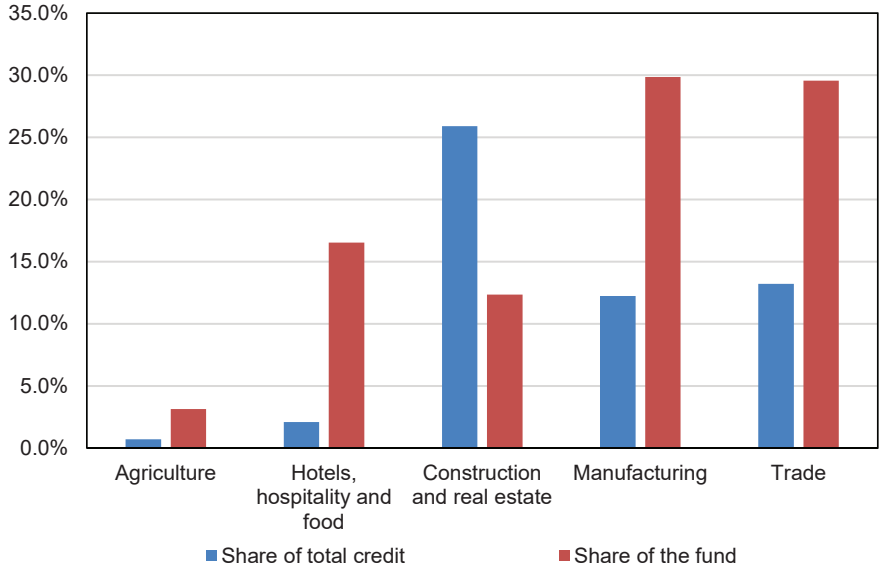
SOURCE: Bank reports to the Banking Supervision Department.

At the end of June, an additional fund was created for **small businesses with high risk levels.** The fund provided a guarantee at the rate of 60 percent, and was intended to assist businesses whose request for credit on the general track was not approved or the credit they received was not sufficient for their needs. The fund approved 3,662 requests (about 81 percent of the total requests submitted to it) with a total amount of about NIS 1.5 billion (about 50 percent of total requests). This fund was characterized by more stringent conditions than the regular track (new businesses and businesses that were significantly affected by the crisis). In a breakdown by industry, the hotel, catering and food industries account for a particularly notable share of the total credit provided by the fund.

[13] Nonetheless, this industry received significant assistance in the form of loans provided as part of the Bank of Israel program for small and micro businesses—NIS 3.9 billion between December 2020 and February 2021. During this period, which overlaps the beginning of the third lockdown at the end of December and the exit from it during the second week of February, the construction and real estate industry's share of this amount reached 32 percent, which is more than double its share of total credit provided to the business sector.

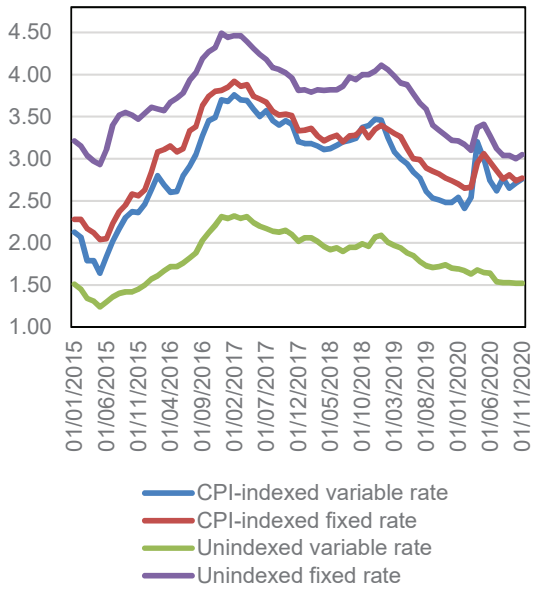
The fund for large businesses was characterized by a relatively small number of credit requests (and relatively low usage), perhaps because large businesses have preferable financing sources.

Figure 4.9
Industry Comparison of Total Business Credit and Credit from the State-Backed Small and Medium Business Fund (percent)



SOURCE: Bank reports to the Banking Supervision Department.

Figure 4.10
Mortgage Interest Rates, Various Tracks
(percent)



SOURCE: Bank of Israel.

Table 4.2
State-guaranteed funds - summary table

	General track (specific for COVID-19)	Increased track - small and medium businesses	COVID-19 track - large businesses
Annual turnover in NIS million (as a condition for submitting a request to the fund)	Up to 400	Up to 400	Above 200
Additional conditions	Cash-flow difficulty	Significant harm	Cash flow difficulty
Fund total (NIS billion)	36	4	6
State guarantee as a percentage of each loan	85	95-85	75
Maximum guarantee as a percentage of the fund	15	60	12
Number of requests submitted by December 27	99,645	4,766	73
(Volume of requests in NIS billion)	-63.4	-3.9	-3
Number of requests approved by December 27	58,314	3,877	39
(Volume of approvals in NIS billion)	-19.9	-1.93	-1.6
Take-up rate by December 27	55	48	26.6

SOURCE: Banks' reports to the Banking Supevision Department.

Table 4.3
Outstanding household debt

(NIS billion)

	Balances					Rates of change	
	2019	5-2020	6-2020	9-2020	12-2020	From the start of the year	Most recent quarter[a]
Total household debt[b]	**588**	**594**	**595**	**602**	**612**	**4.1%**	**1.6%**
By source:							
From banks[c]	**520**	**526**	**528**	**535**	**545**	**4.9%**	**1.8%**
of which : Housing	364	379	380	388	397	**9.1%**	**2.4%**
Nonhousing[d]	155	147	148	147	148	**-5.0%**	**0.3%**
Current account	12	10	10	9	9	**-25.8%**	**-4.0%**
From institutional investors	**32.8**	**33.4**	**33.0**	**32.8**	**33.0**	**0.7%**	**0.5%**
of which : Housing[e]	14.0	13.7	13.4	13.1	12.9	**-7.6%**	**-1.5%**
Nonhousing	18.8	19.7	19.6	19.7	20.1	**6.8%**	**1.8%**
From credit card companies[f]	**23.7**	**22.9**	**22.7**	**22.9**	**22.9**	**-3.5%**	**0.0%**
From government (earmarked credit)[g]	**11.4**	**11.1**	**11.0**	**10.9**	**10.7**	**-5.7%**	**-1.3%**
of which: Housing	7.3	7.0	7.0	6.8	6.7	**-7.4%**	**-1.9%**
By use:							
Total housing debt	386	400	400	408	417	**8.2%**	**2.2%**
Total nonhousing debt	202	194	195	194	195	**-3.7%**	**0.4%**

[a] Last three months.
[b] Excluding credit from nonresidents, due to lack of data.
[c] Individuals who are not businesses.
[d] Including loans for nonhousing purposes backed by a dwelling.
[e] Loans backed by a mortgage. Until August 2013, the figure did not distinguish beween mortgage-backed loans to households and those to the business sector. In August 2013, a distinction was made and the data were revised retroactively, which moved some of the balance to business sector debt.
[f] Loans that are the responsibility of credit card companies. Loans that are the responsibility of or backed by the banks are included in the data on banks.
[g] Loans from the government to borrowers generally pass through the banking system, which serves as a pipelie for the transfer of payments. The main part of this item is loans from the government, but it also includes loans from employers (who are not part of the government or municipal authorities) to employees, which we cannot separate.

Box 4.1

WITHDRAWALS FROM THE VARIOUS SAVINGS PRODUCTS DURING THE CRISIS

- The withdrawal of savings from institutional investors during 2020 was concentrated primarily during the month of March with the onset of the COVID-19 crisis.
- The levels of withdrawal vary according to the savings channel: the larger the tax benefits and the lower the liquidity of the savings type, the lower is the rate of withdrawal. Thus, there were no excess withdrawals from the new pension funds at any time during the period, compared to mutual funds, which experienced a high rate of withdrawal in March across all of the various investment tracks.
- There was a notable shift toward more conservative investment tracks within the provident funds and advanced study funds. In retrospect, this shift resulted, on average, in the loss of revenue for savers.

During the past 20 years, the proportion of the public's asset portfolio managed by the institutional investors has almost doubled.[1] During a period of crisis, withdrawals of savings sometimes increase, due to both a fear of losses and the need for liquidity as a result of increased unemployment. The size and characteristics of the withdrawals during a period of crisis can impact the total savings held by households and the volatility in the financial markets. Therefore, it is important to consider the characteristics of the withdrawals during such periods from the various savings channels—life insurance, the old and new pension funds[2], provident funds[3], advanced study funds, provident investment funds[4], savings policies, and mutual funds.[5] In view of their different characteristics (with respect to term, liquidity, and taxation), they may also differ from one another with respect to the characteristics of the withdrawals and perhaps also the withdrawer. We expect there to be differences in withdrawals across the savings channels, and in particular between long-term and short-term savings. It is of interest to analyze the scope of these differences and to determine whether they are observed in the markets during a period of crisis. We will present the differences in trend across the various savings channels as reflected in the withdrawal of funds during the COVID-19 crisis and during the Global Financial Crisis of 2008. We will also present the amounts withdrawn and the investment channels from which they were withdrawn or transferred during the crisis. In addition, we will present—for the first time—information regarding the scope and characteristics of savings in the provident investment funds, a relatively new savings channel in the Israeli market, and the activity of savers in those funds.

[1] From 35 percent at the beginning of the 2000s to 54.2 percent at the beginning of 2020. The rest of the public's assets are held directly by the public, primarily in the form of bank deposits, although they also include direct holdings of securities.

[2] We do not discuss the general new pension funds, but only the comprehensive funds in which most of the assets are managed.

[3] In this box, the data include the following savings channels: employer and personal contributions for severance, centralized contributions for severance, and funds for other purposes.

[4] In this box, the data include the "Savings for Every Child" provident investment funds, all of which are categorized as having the general track.

[5] The analysis and the data for the mutual funds also include index funds, which passively track indices.

a. Background—the products

The public can invest in the capital market either directly or by way of intermediaries, i.e., the institutional investors. The choice to invest by way of the institutional investors involves handing over the management of a portfolio to a financial institution.[6] The institutional investors manage a number of investment vehicles, which differ from one another with respect to tax benefits and liquidity levels, among other things, which can be expected to influence the term of the investment.

It is generally the practice to divide private savings into three layers: the first is savings by way of National Insurance, which provides an old-age pension (mandatory savings according to law)[7]; the second is employment-based savings by means of pension savings products (mandatory savings according to law)[8]; and the third is personal savings in addition to the previous two layers, in which the household chooses how much to save. While most savings vehicles that are managed by the insurers and the provident fund management companies (life insurance, pension funds, and provident funds) are part of the second layer, there are also managed products within the third layer (i.e., advanced study funds and provident investment funds). In contrast, mutual funds are managed only as part of the third layer, and do not provide any retirement tax benefits. Table 1 describes the various products according to their characteristics.

Table 1

Period of investment	Name of the product	Tax benefits on withdrawal	Other benefits	Tax benefits when transferring between investment tracks (mobility)	Proportion of fundsthat can be withdrawn with no fine[1] and the number of days from the order to withdraw until the receipt of funds
Short-term investment / private savings	Mutual funds	None	None	There is no benefit.[2]	No fine on any part of the funds. Delivery within one business day.
	Investment provident fund (exists since November 2016)	Exemption of capital gainstax when funds are withdrawn as an annuity after the age of 60.	None	Yes	No fine on any part of the funds. Delivery within 4 business days.
	Savings policies	None	None	Yes	No fine on any part of the funds. Delivery within 30 days.

6 Apart from a negligible proportion of investors who manage their own provident funds and advanced study funds (IRA funds).

7 The National Insurance Law [Combined Version], 5728–1968.

8 Expanded Directive [Combined Version] for Mandatory Pensions According to the Collective Bargaining Law, 5717–1957.

Table 1

Period of investment	Name of the product	Tax benefits on withdrawal	Other benefits	Tax benefits when transferring between investment tracks (mobility)	Proportion of funds that can be withdrawn with no fine[1] and the number of days from the order to withdraw until the receipt of funds
	Advanced study funds	Exemption from capital gains tax on savings held for more than 6 years.	Savings by employees are usually financed in part by the employer. Income tax benefit for deposits.	Yes	75 percent of the money in the overall funds have been held for over 6 years and hence do not have a tax penalty.3 Delivery within 4 business days.
	Provident funds	Exemption from capital gains tax. Fine of 35 percent for withdrawal prior to retirement age for funds deposited since 2008.	Income tax benefits.	Yes.	No fine on 80 percent of the funds.[4] Delivery within 4 business days.
Long-term investment	New pension funds	Exemption from capital gains tax. Fine of 35 percent if funds are withdrawn before an insurance event or retirement.	Income tax benefits. 30 percent of the assets are invested in designated government bonds, which provide an above-market return.	Yes	Funds cannot be withdrawn without a fine. Delivery within 4 days.
Long-term investment	Pension insurance policy (managers insurance)	Exemption from capital gains tax. Fine of 35 percent for withdrawal before an insurance event or retirement.	Income tax benefits. There are also old polices that are closed to new members.	Yes. In some of the policies, there is no possibility of switching between investment tracks.	The funds cannot be withdrawn without a fine. Delivery within 7 days of the end of the insurance (retirement age) or 30 days if prior to that.
	Old pension fund	Exemption from payment of capital gains tax. Loss of rights[5] in the case of withdrawal prior to an insurance event or retirement.	Income tax benefits. 30 percent of the total assets are invested in designated government bonds. This is an old product that is not open to new members.	Not relevant.	The funds cannot be withdrawn without a fine. Most of the savers are older.

[1] Does not include withdrawals in cases of dire need, namely situations that permit early withdrawal of pension savings due to financial or health distress.
[2] It is not possible to transfer funds between tracks. Theoretically, funds can be withdrawn and reinvested with a financial institution or in a different mutual fund.
[3] During the COVID-19 crisis, exemptions were provided for limited withdrawals from advanced study funds, such that it was possible to withdraw a limited amount even if six years had not passed since the opening of the fund.
[4] Primarily with respect to savings deposited since 2008. Savings prior to that can be withdrawn without a fine after 15 years.
[5] The calculation of rights in the old pension funds varies from one fund to another, as does the fine.
SOURCE: Based on the laws governing the various savings products.

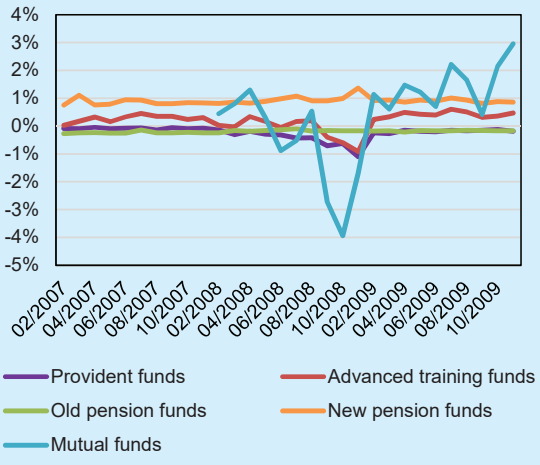
b. The conduct of those who manage their savings through institutional investors during periods of crisis

In order to characterize the behavior of savers during a period of crisis, we will examine two elements: (1) withdrawing cash from an investment vehicle and depositing it in a bank account; and (2) mobility – a transfer between investment tracks within the same investment vehicle.

1. Withdrawal

Figures 1 and 2 present the net new investment (total amount deposited less total amount withdrawn) for each product during the Global Financial Crisis (Figure 1) and during the COVID-19 crisis (Figure 2), according to the various savings products offered by the institutional investors.[9] The graphs show the difference in behavior between savers in the two cases. The excess withdrawals in 2020 were concentrated in the month of March. This fact points to the disconnect between the financial markets—in which the crisis ended early in the year—and the real markets, in which the crisis was more prolonged.

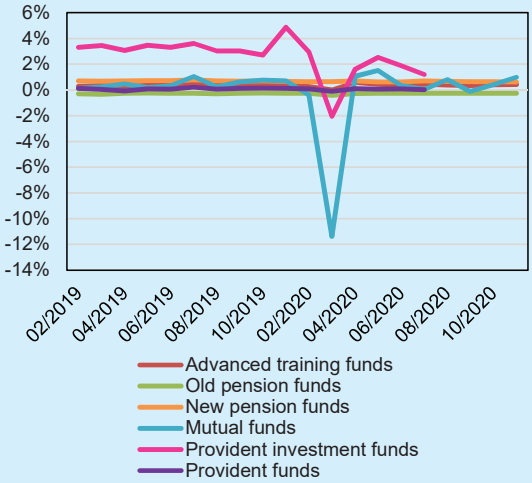
Figure 1
Net New Investments in the Various Institutional Channels as a Share of Total Assets at the Start of the Relevant Month, 2007–2009*



* Except for December and January of each year, during which there is a periodic increase in new investments.

SOURCE: Based on mutual fund reports to the Capital Market Authority and Tel Aviv Stock Exchange data.

Figure 2
Net New Investments in the Various Institutional Channels as a Share of Total Assets at the Start of the Relevant Month, 2019–2020*



* Except for December and January of each year, during which there is a periodic increase in new investments.

SOURCE: Based on mutual fund reports to the Capital Market Authority and Tel Aviv Stock Exchange data.

[9] As a result of accounting standards, there are no data available on withdrawals from managers' insurance policies. In the future, with the adoption of IFRS17, it will be possible to identify withdrawals from savings products managed by the insurance companies. It is reasonable to assume that savers in these products behave similarly to those in parallel products offered by the institutional investors.

Even though the lockdown led to an increase in unemployment and unpaid leave (situations in which pension contributions are not mandatory), the COVID-19 crisis did not lead to any major change in the rate of net new investment in the new pension funds relative to precrisis levels (Figure 2), which is similar to the pattern observed for the pension funds in 2008. This is particularly surprising in view of the fact that one-third of the labor force was furloughed during that month. In order to explain this phenomenon, we examined deposits and withdrawals from the pension funds separately relative to the trend in recent years. We found that starting in the month of April there was a decline in the rate of deposits relative to the same months in the previous year[10]: From 2017 until March 2020, there was an average increase of about 11 percent in deposits relative to the corresponding month in the previous year, while between April and December 2020 the average increase was only about 3.5 percent. The largest decreases relative to the trend occurred from April to June[11] and in November, such that the decline in deposits appears in the following month, both lockdowns. It should be noted that the rate of decline in deposits relative to the trend is significantly less than the increase in the rate of unemployment during these months. Nonetheless, during the months of the crisis the rate of withdrawals from the new pension funds was similar to, or even lower than, the trend. This finding is surprising but nonetheless consistent with the literature: The effect of default options and inertia is reflected in the low number of withdrawals, even during periods of crisis.[12] In the old funds, which have been in a run-off period (no new members and an aging population of existing members) in recent years, there is a constant flow of withdrawals totaling about about NIS 1.5 billion[13] per month, although in March the amount spiked to NIS 2.3 billion, which was the second highest level during the past decade. During the remaining nine months of the year, withdrawals were similar to the average for recent years. This indicates that the March withdrawals were anomalous—and may come with a significant economic cost (Table 1)—rather than due to the early retirement of savers. However, in view of the large amount of assets in the old funds, the March withdrawals represent a negligible proportion of total assets (about 0.5 percent as opposed to 0.35 percent in an average month).

In contrast, there were relatively high rates of withdrawal from mutual funds during both crises. Although this finding is not unexpected in view of the short-term nature of the savings instrument and the lack of incentives to leave the savings untouched (apart from the deferral of tax payments), the rate of withdrawal during the current crisis was three times the rate during the Global Financial Crisis, and the correction in April 2020 was less intense than the one during the months subsequent to the 2008 crisis. The rates of net new investment in advanced study funds (0 percent) and the provident funds (-0.21 percent) are between the rates in long-term and short-term savings. Net new investment in these products is usually positive and most of the funds are liquid. However, their withdrawal involves a loss of tax benefits and the money is not immediately liquid. The rates of withdrawal from these savings products during the COVID-19 crisis were lower than during the previous crisis. In particular, the rates of

[10] A similar examination of the other products discussed in this box did not lead to similar findings. In particular, there was no drop in deposits or increase in withdrawals relative to the trend in the months of April-June.

[11] In April, there was also a sharp decline in the rate of withdrawals, such that the rate of net new investment dropped relative to the trend only during the months of May–June.

[12] Such as: Blanchett, Finke, and Reuter (2020); Chetty, Friedman, Leth-Petersen, Nielsen, and Olsen (2014).

[13] On average during the last three years.

withdrawal from the advanced study funds were not particularly high after August 2020, even though, due to the crisis, exemptions were provided during that month for the withdrawal of funds before maturity.[14]

Net new investment in the provident investment funds was markedly lower than that in the medium- and long-term savings products, but higher than in mutual funds. It therefore appears that the tax incentives attached to them (relative to mutual funds)—primarily the tax exemption for long-term savers and perhaps also the delay in liquidity—are what led savers to avoid withdrawing their savings in this case. It should be noted that total assets under management in this product are still relatively low (approximately NIS 15 billion).

Against the background of the negative net new investment in the institutional investors, the levels of cash and bank deposits grew significantly, an indication that most of the money withdrawn from the institutional investors was not reinvested in the short term.

2. Investment tracks

Although the savers in institutional investors do not directly choose their investments, they can select the investment track. In the case of the long- and medium-term investment products, and also in the case of the provident investment funds, savers can choose between general tracks (in which the mix of investments is chosen by the financial institution) and tracks that specialize in a particular type of asset, namely equities, bonds, or low-risk, unindexed shekel-denominated instruments.[15] The mutual funds examined here do not include any funds defined as general, but rather include only specialized ones. An examination of the distribution of savings by investment tracks available in each investment vehicle can provide additional insight into the characteristics of the savings and of the savers. In the examination of this aspect of the new pension funds, we will focus on the provident and provident investment funds, the advanced study funds, and the mutual funds.[16]

In the new pension funds, the provident funds, and the advanced study funds, most of the savings is invested in the general tracks (Figure 3).[17] In the provident investment funds, the proportion of assets invested in the equity tracks is significantly greater than in the provident funds and the advanced study funds, and it is closer to the proportion observed in the mutual funds. This on its own is an indication of the unique characteristics of the provident investment funds and of the savers in this vehicle, who may be more active in the investment selection process or less risk-averse.

[14] For the sake of comparison, the exemptions on the withdrawal of pension funds in the US led to a dramatic increase in withdrawals during the COVID-19 crisis.

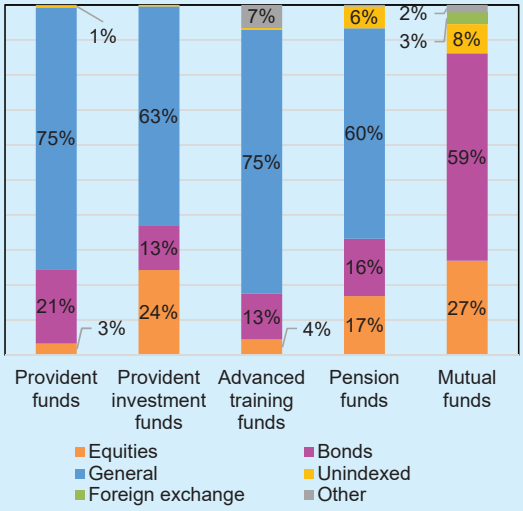
[15] Within the general track, we have included the following tracks: pensioners, graduated, abroad, Israel, *halachic* and cohorts ("the smart model"). The bond and equity tracks also include tracks that specialize only in Israel or only abroad. The funds that specialize in index tracking were defined as share funds. The data on the guaranteed-return funds was excluded. The "other" category includes the following tracks: other, foreign residents, uncategorized, and flexible. The funds were categorized into the various tracks according to the Capital Market Authority classification, while the mixed funds (such as 80/20) were categorized according to the majority of their assets.

[16] Here again the data are for the insurance companies. However, in the case of the new policies, as in the case of the new pension funds, most of the savings are invested in general tracks.

[17] We do not have more detailed information on the investment tracks in 2008, but there are indications that during the entire period most of the funds were invested in the general tracks.

Figure 4 presents the net new investment (positive or negative) in the various investment tracks for each product separately, as a percentage of the total flow in absolute terms in that track. The net new investment in absolute terms in all of the tracks and in all of the products adds up to 100 percent. The Figure shows that there was positive net new investment in all tracks in the new pension funds. Thus, there were no large-scale withdrawals from this product, and apparently no significant transfers between the investment tracks.[18] In contrast, in the provident funds and the advanced study funds, the accumulation in the low-risk, unindexed, shekel-denominated funds[19] and the bond funds (which are considered to be more conservative) was positive and almost the mirror image of the negative accumulation in the general tracks and the share tracks. It appears that savers in the provident funds and advanced study funds refrained from withdrawing their money in order to avoid losing the tax benefits, and chose to reduce their risk by shifting to more conservative tracks. A shift to more conservative tracks during a crisis is not unique to the COVID-19 crisis, and a similar phenomenon—though on a broader scale—was observed during the Global Financial Crisis in the mutual funds, the provident funds, and the advanced study funds. Savers are liable to pay a heavy price for such a move, since it has been reported in the literature that shifts to more conservative tracks during a crisis usually result in financial losses.[20] A saver in a provident fund, provident investment fund, or advanced study fund who shifted his money in March 2020 from an equity track to a low-risk unindexed shekel denominated track lost an average of about 19.5 percent in returns over six months.[21]

Figure 3
Distribution of Assets Among Specializations, by Savings Product Prior to the COVID-19 Crisis, February 2020



Calculation method: Total assets in each of the specializations, divided by total assets in the track.

SOURCE: GemelNet, PensiaNet, and mutual fund reports to the Capital Market Authority.

[18] A similar examination for April and May shows that despite the drop in deposits during those months relative to the trend, the distribution of net new investment between the tracks remained unchanged.

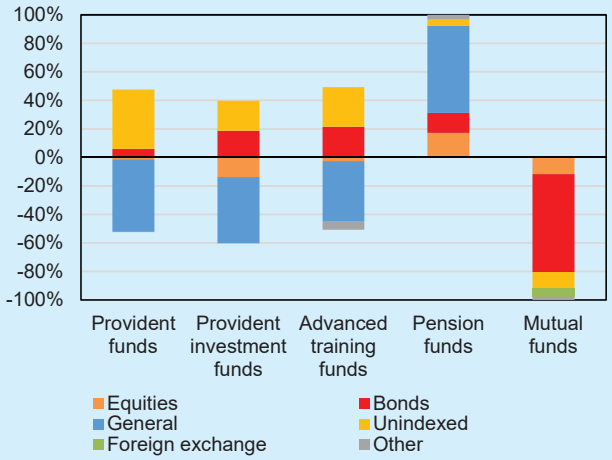
[19] These data are particularly noteworthy in view of the low proportion of the shekel funds within these products prior to the crisis. Assets in the shekel provident funds totaled NIS 1.77 billion at the end of February, and a total of NIS 1.9 billion was invested in them in March alone (Figure 2).

[20] It was found that in the past the shift from "risky" tracks to "conservative" tracks reduced yields: Ben-Rephael, Kandel, and Wohl (2012); Bucher-Koenen and Ziegelmeyer (2014).

[21] Calculated as a simple average of yields on the share tracks of each product, less a simple average of yields on their shekel tracks (taken from the Gemelnet site). The yields were calculated from the beginning of 2019 to September 2020, less the yield on that fund from the beginning of 2019 until March 2020. The funds for which data were missing were excluding from the calculation of the average.

In contrast, there was negative net new investment (withdrawals/redemptions) in the mutual funds in all the tracks (Figure 4), including a high rate of withdrawal (15 percent) from the assets in the low-risk unindexed shekel denominated track, which is in contrast to the behavior of savers during the Global Financial Crisis when there was positive net new investment (of about 15 percent) in that track in mutual funds as well. In fact, the withdrawals from the equity tracks during the current crisis were less than those from the other specialization tracks. There are two possible explanations for this behavior. The first is that investors in mutual funds are more sensitive to price changes, which are published daily and even intraday as part of the publication of the fund's yield, in contrast to the rest of the investment vehicles offered by the institutional investors, for which short-term yields are not published as frequently. The literature reports that when yields are published less frequently, there is less withdrawal and less transferring between investment tracks, so the phenomenon is not observed in the case of the other savings products.[22] During the COVID-19 crisis, shekel-denominated asset prices fell sharply, particularly the prices of government bonds during the month of March (see the *Financial Stability Report* for the second half of 2020 and the description in the body of this chapter).

Figure 4
Net New Investments by Track in Each of the Investment Products as a Share of New Investments that Month, March 2020



Calculation method: Net new investments from the start of 2019 until March 2020, minus net new investments from the start of 2019 until February 2020, by specialization and by product. Each product's share is the net new investment in that product in March, minus the sum of the absolute values of net new investments in all specializations in that product.

SOURCE: GemelNet, PensiaNet, and mutual fund reports to the Capital Market Authority.

There were also withdrawals from the equity and bond tracks, which experienced a shock in the markets, although the shock in the shekel markets was more dramatic and more of an outlier, thus apparently creating a more pronounced effect on withdrawals from these tracks. For the rest of the institutional investors, the lack of access to short-term yields may have prevented withdrawals from the shekel and conservative tracks. Another possible explanation is that savers in mutual funds expected a need for liquidity and preferred to withdraw funds from conservative tracks and only later from riskier tracks, which were more adversely affected by the crisis but were expected to recover in the medium term. It may also be that these investors are less risk-averse as indicated by the diversification of investments among the various investment tracks even before the crisis.

With respect to the provident investment funds, and despite their similarity to the mutual funds in the distribution of assets between the investment tracks, the shifts between tracks during the COVID-19

[22] Shaton (2017), and Porat and Steinberg (2011).

crisis are similar to those in the provident funds and the advanced study funds, and are characterized by a shift toward the conservative tracks (Figure 4).

c. Conclusion and Discussion

During the COVID-19 crisis, as in the Global Financial Crisis, the excess withdrawals by savers from the institutional investors in Israel were in line with the shocks to the markets. They were clustered in the month of March, and following that—as the markets recovered—there were no excess withdrawals observed, despite the continuing crisis in the real economy. Nonetheless, an examination of the population groups that were most affected by the crisis in the real economy and those that hold their savings with the institutional investors indicates that the characteristics of the withdrawals are consistent with the nature of the current crisis. A long-term survey carried out by the Central Bureau of Statistics in 2018 shows—as do surveys from previous years—that most of the assets in all of the savings vehicles belong to the two highest income quintiles in Israel, while the current crisis has primarily affected low-income earners (see Chapters 5 and 8 in this report). Furthermore, the holdings of the highest quintiles increase with the product's liquidity. Thus, they hold 70 percent of the advanced study funds and close to 80 percent of the mutual funds. It appears that the increase in unemployment and in the number of furloughed workers did indeed reduce deposits relative to the upward trend of recent years, but not only was there no increase in withdrawals from the pension funds, there was even a decline, such that the over-all effect on investments was not substantial. There was a one-off increase in withdrawals from the old pension funds in March, which apparently was not the result of an increase in early retirement.

The reasons for the differences in levels of withdrawal and of switches between investment tracks in the institutional investors are, in our view, related to the characteristics of the vehicles (primarily in terms of tax benefits and long-term savings incentives) and to the accessibility of information for savers (the frequency with which information is published), as well as perhaps the characteristics of the savers (i.e., a relatively large presence of active, less risk-averse investors in the mutual funds). These findings emphasize the importance of understanding the characteristics of the savings vehicles, the applicable regulations, and the level of transparency—factors that are known to have a major influence on savers' behavior.

Provident investment funds are a new hybrid vehicle, in which the rate of withdrawal was low relative to mutual funds, although there was a high rate of switching to conservative tracks, which is similar to what was observed in the provident funds.

In general, moving between the specialized tracks within the various savings vehicles led to significant losses for savers. The low rate of withdrawal in some of the vehicles and the high rates of mobility between the tracks within them is becoming even more relevant to the stability of the markets and to the future yields of savers, as investment through the institutional investors increases. This is particularly the case with respect to the provident investment funds, which, despite their small share of total savings, are expected to grow in the coming years and to capture a broader market share.

Withdrawing funds during a shock to the markets apparently leads to losses for savers. The timing and nature of the tracks from which there were withdrawals or transfers imply that they were due to not only the need for liquidity but also the fear created by the shocks to the markets.

References

Ben-Rephael, A, S. Kandel, and A. Wohl (2012). "Measuring Investor Sentiment with Mutual Fund Flows", *Journal of Financial Economics*, 104(2): 363–382.

Blanchett, D., M. S. Finke, and J. Reuter (2020). "Portfolio Delegation and 401(k) Plan Participant Responses to COVID-19" (No. w27438), National Bureau of Economic Research.

Bucher-Koenen, T. and M. Ziegelmeyer (2014). "Once Burned, Twice Shy? Financial Literacy and Wealth Losses during the Financial Crisis", *Review of Finance*, 18(6): 2215–2246.

Chetty, R., J. N. Friedman, S. Leth-Petersen, T.H. Nielsen, and T. Olsen (2014). "Active vs. Passive Decisions and Crowd-Out in Retirement Savings Accounts: Evidence from Denmark", *The Quarterly Journal of Economics*, 129(3): 1141–1219.

Porat, Y. and N. Steinberg (2011). "Chasing Their Tails: Inflow Momentum and Yield Chasing among Provident Fund Investors in Israel", Bank of Israel Discussion Papers Series, 2011.07.

Shaton, M. (2017). "The Display of Information and Household Investment Behavior", Board of Governors of the Federal Reserve System Finance and Economics Discussion Series Working Paper 2017-043.

Box 4.2

ESTIMATING THE NUMBER OF BUSINESSES WHOSE RISK OF CLOSURE INCREASED SIGNIFICANTLY DURING THE COVID-19 CRISIS

- According to the Israel Tax Authority, about 9,000 businesses closed during the first half of the year, which is 33 percent lessthan during the same period last year.
- The official figure for the closure of businesses during the COVID-19 crisis is apparently an underestimate, since many business owners who wanted to avoid the costs of operating their businesses while at the same time maintaining their eligibility for State assistance to businesses suspended their operations without closing their files at the Israel Tax Authority.
- The estimated number of businesses that didn't close officially, though it appears that their situation has deteriorated to the point that their risk of closure has increased significantly, is based on revenue data for July–August, during which the restrictions on movement in most industries were relatively limited. About 70,000 businesses—most of them in the trade and services industries—experienced a decline of 80 percent or more in revenue during July–August 2020 relative to the corresponding period in 2019.
- About 60 percent of the businesses that experienced a drop of 80 percent or more in their revenue during July-August are classified as micro businesses, with annual revenue of up to NIS 300,000. The aggregate revenue of these businesses is estimated at about NIS 5 billion, and their share of aggregate business revenue is estimated at only about 0.25 percent. It can also be assumed that a high proportion of these micro businesses are self-employed individuals without any employees. Thus, notwithstanding the need to ameliorate the harm to businesses whose activity has contracted, the effect of the closure of these businesses on GDP, the credit risk to the financial system, and the labor market is limited.

The COVID-19 pandemic and the restrictions on movement in order to mitigate its spread had an adverse effect on economic activity. This is manifested in, among other things, the increased number of businesses that are experiencing a major downturn in their activity and whose risk of closure has increased. The realization of this risk and the closure of these businesses is liable to be reflected in real economic variables, such as GDP and the labor market variables, and to bring about an increase in credit losses among capital providers. Estimating the number of businesses that have experienced a major downturn in their activity as a result of the crisis and understanding their composition can provide insight into the extent to which the economy would be affected if the risk of closure is realized and these businesses are closed.

a. Defining the closure of a business

Officially, a business is considered to be closed when it closes its file with the Israel Tax Authority. Accordingly, in the first section of the box we will describe the average annual number of businesses that were officially closed prior to the onset of the COVID-19 crisis. This figure reflects the number

of business closures in Israel during normal periods and can serve as a benchmark for the subsequent discussion of the number of businesses officially closed during the COVID-19 period.

The estimated number of business closures during the COVID-19 crisis, based on the data for official closures, is liable to be an underestimate of the number of businesses that actually terminated their economic activity. This is because there are businesses that are delaying the closure of their file at the Israel Tax Authority in order to continue being eligible for grants from the State as part of the safety net for businesses. In order to estimate the number of businesses that terminated their economic activity even if they did not officially close, we will examine the number of businesses that experienced a contraction in their income of more than 80 percent during the COVID-19 crisis relative to their income during the same period in the previous year. In contrast to official closures, a sharp drop in a business's revenue may be indicative of only a temporary halt in activity and not necessarily permanent closure. Nonetheless, it may be said that a major contraction in revenue reflects at least a significant deterioration in the state of a business during the COVID-19 pandemic and an increase in the probability of its closure.[1] In the last part of the box, we will make a more stringent assumption that all of the businesses that experienced a major downturn will indeed close, and we will estimate the effect on the economy.[2]

b. The closure of businesses prior to the COVID-19 crisis – the official figures

The average annual number of businesses opened stood at 56,000 prior to the COVID-19 crisis, while the number that closed was 43,000. The variation across industries is particularly notable: While the food and communications industries are characterized by high turnover rates (a relatively high number of openings and closures each year), the turnover rates in finance and manufacturing are low (Figure 1). The variance in the turnover rates reflects variance in the level of business risk between industries. Figure 2 presents the three riskiest industries and the average of all industries. The Figure shows that 54 percent of the businesses that were opened in 2014 didn't survive for five years. The businesses in the hospitality and food, information and communications, and trade industries, which have the highest turnover rates, also have the lowest ability to survive. For example, 65 percent of the businesses in the hospitality and food industry that were opened in 2014 were closed by 2019.

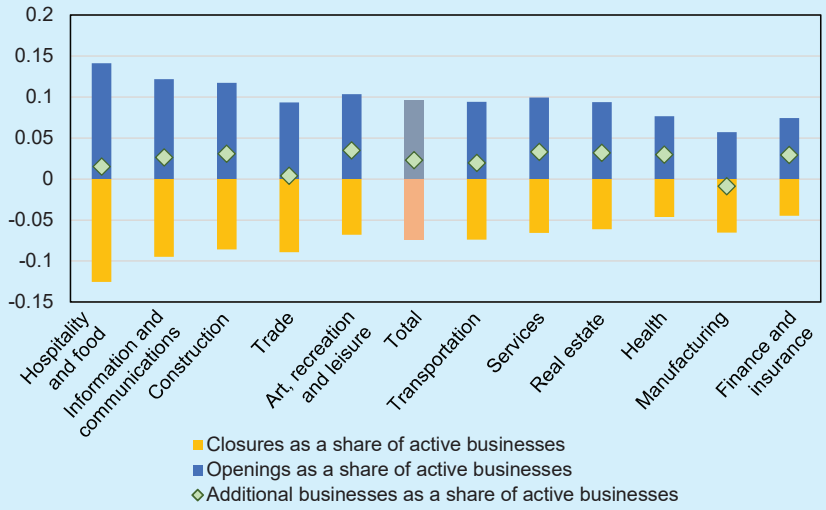
c. The number of businesses closed during the COVID-19 crisis – the official figures

Overall, the current crisis might have been expected to bring about an increase in the number of official business closures beyond its level in a normal period. However, according to official Israel Tax Authority

[1] It should be noted that the risk of a business closure is also liable to increase after a decline of less than 80 percent in revenue. In this box, we focus on the group of businesses whose risk of closure increased significantly, and the analysis therefore focuses on the group of businesses that experienced a drop of 80 percent or more in their revenue.

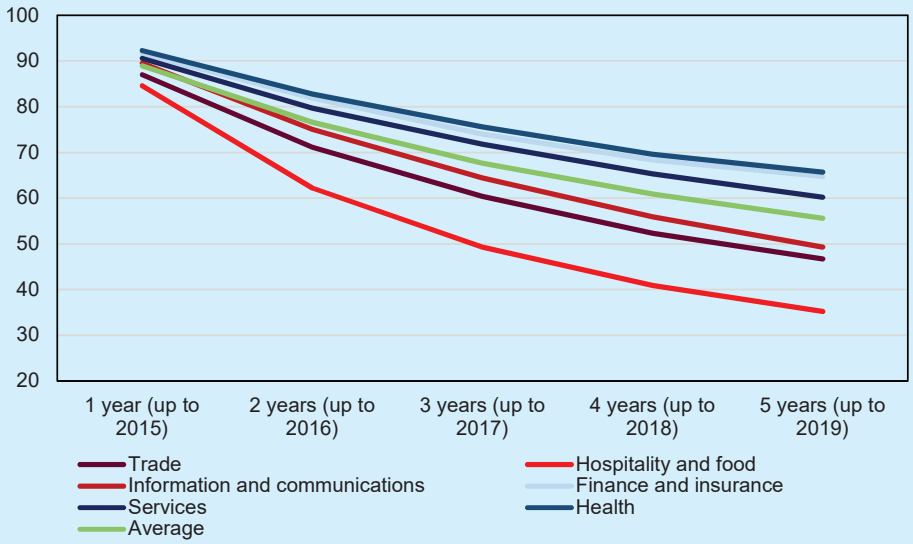
[2] The analysis will be based mainly on three reports published by the Israel Tax Authority for the months March–April and July–August 2020, which were used to analyze the VAT reporting of licensed businesses, with the goal of estimating the effect of the COVID-19 crisis on business revenue across industries and according to business size. The analysis in the reports is based on a very high proportion of total businesses, and we will therefore assume that the calculated estimates are indicative of the entire population of businesses in Israel. Thus, the report for July–August, which will be the focus of the analysis, is based on 447,459 businesses, which constitute 73 percent of all businesses in Israel and 82 percent of all active businesses (i.e. those that had positive revenue in 2019).

Figure 1
Business Openings and Closures as a Share of Active Businesses in the Industry, 2017–2019 Average



SOURCE: Based on Central Bureau of Statistics, "The Demography of Businesses - Survival and Movement of Businesses, 2017–2019".

Figure 2
Five-Year Survival of Businesses Started in 2014, by Industry (percent)



SOURCE: Based on Central Bureau of Statistics, "The Demography of Businesses - Survival and Movement of Businesses, 2017–2019".

reports, during the first six months of 2020 only 9,384 businesses were closed—33 percent less than during the corresponding period in 2019. At the same time, 17,928 new businesses were opened, which is 15 percent less than during the same period in 2019. The net addition of businesses to the economy during the first half of 2020 was therefore positive: 8,544 businesses as opposed to 6,964 businesses during the corresponding period in 2019.

The finding of a sharp decline in the number of business closures during the crisis is counterintuitive. A possible explanation of this finding is that business owners who want to avoid the payment of fixed and variable costs related to the operation of their business, while at the same time maintaining their eligibility for assistance provided by the State in the form of a safety net for businesses, suspended their economic operations without officially closing their files at the Israel Tax Authority. Thus, the official figure for the number of business closures does not fully reflect the number of businesses whose economic activity was actually terminated. The next section of the box uses the figures for the drop in business revenue to estimate the number of businesses whose situation significantly deteriorated during the COVID-19 crisis (although they did not close officially), such that their risk of closure increased substantially.

d. Estimating the number of businesses whose situation deteriorated significantly and whose risk of closure increased during the COVID-19 crisis

According to Israel Tax Authority data, a significant proportion of businesses suffered declines in revenue during 2020 relative to the corresponding period in 2019. It is plausible that the businesses with the largest declines in revenue experienced the most severe deterioration in their situation, and their risk of closure grew. The Israel Tax Authority reports do not present the data on declines in business revenue in a continuous form but rather in segments. The segment with the greatest decline in revenue relates to a reduction of 80 percent or more. On the assumption that a drop of 80 percent or more reflects a significant deterioration in the business's situation, the number of businesses included in the aforementioned segment can serve as an indicator of the number of businesses whose risk of closure has increased.[3]

The goal of the analysis is to identify the businesses whose revenue declined as a result of an ongoing deterioration in their situation and that are not expected to recover even after the restrictions on movement that were imposed during the COVID-19 pandemic are removed, and to differentiate them from businesses whose revenue fell due to a temporary slowdown in their activity as a result of the restrictions on movement. The drop in revenue during March–April and May–June may reflect a temporary deterioration in the businesses' activity as a result of the restrictions on movement imposed due to the pandemic, and may not necessarily be indicative of a permanent deterioration in their activity. However, a drop in revenue in July–August, when the restrictions imposed on movement in most industries were negligible[4], likely indicates that the businesses found it difficult to recover from the restrictions, that their situation had deteriorated, and that the risk of their closure had increased.

[3] It should be noted that the extent to which the risk of a business closing increases after a given decline in its revenue is derived from its unique financial and operational characteristics, including the structure of its costs and particularly its fixed costs as a share of expenditure, its leverage ratio, and its liquidity ratio.

[4] It should be noted that the results of the analysis remain essentially unchanged after omitting industries whose activity was limited during a significant portion of July–August, such asthe art and entertainment industry.

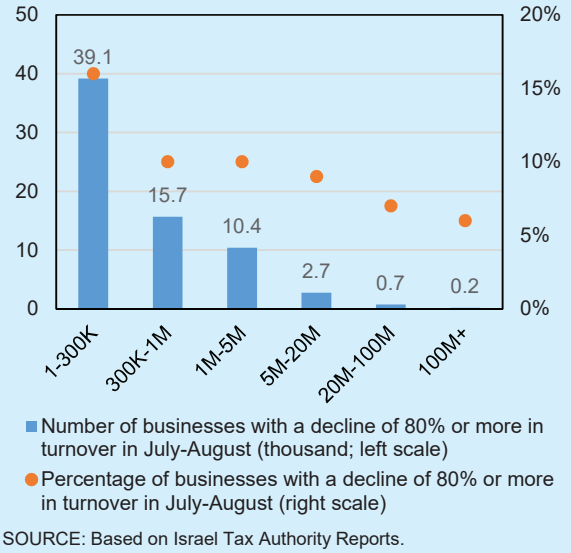
According to the data, 68,766 businesses, or 12 percent of the total[5], recorded a drop in revenue of 80 percent or more relative to the corresponding period in the previous year, and even though they did not close officially their probability of closure apparently increased significantly.[6]

e. The economic effect of the business closures[7]

The question that naturally arises from the foregoing analysis is to what extent an increase in the risk of business closure adversely affects various economic variables, such as GDP, unemployment, and credit losses recorded by capital providers. In the analysis that follows, we assume that all of the businesses that had a decline of 80 percent or more in their revenue during July–August will indeed close, and we will propose an estimate for the effect of such closure on various economic variables.

Figure 3 presents the number of businesses and the share of the total that recorded a drop in revenue of 80 percent or more in July–August according to the size of the business. It shows that a significant proportion of these businesses are small or micro businesses. More specifically, 57 percent are micro businesses with annual revenue of up to NIS 300,000, while 80 percent are small businesses with revenue of up to NIS 1 million. The estimated aggregate revenue of the small and micro businesses that were closed in 2019[8] is relatively modest (NIS 8 billion and NIS 5 billion,

Figure 3
Businesses that Recorded a Decline in Turnover of at Least 80 Percent in July–August, by Turnover Size Group, and Their Weight in Each Group



SOURCE: Based on Israel Tax Authority Reports.

[5] The calculation of the absolute number of businesses is based on the population of businesses in Israel less 86,170 businesses whose revenue in July-August 2019 was zero. We assume that the latter discontinued operations prior to the onset of the COVID-19 pandemic.

[6] It should be noted that alongside the slowdown in activity among some of the businesses, growth was recorded in the activity of other businesses. Thus, according to Israel Tax Authority data, 42 percent of businesses recorded growth in their revenue during July–August. About 34 percent of the businesses even recorded a significant level of growth (more than 10 percent).

[7] Data constraints make it difficult to carry out the various segmentations needed to evaluate the effect of the termination of activity in the 9,384 businesses that were formally closed during the first half of 2020. We will therefore focus in this section of the box only on the 68,766 businesses that were not officially closed in July–August, but rather reported a drop of 80 percent or more in their revenue during this period.

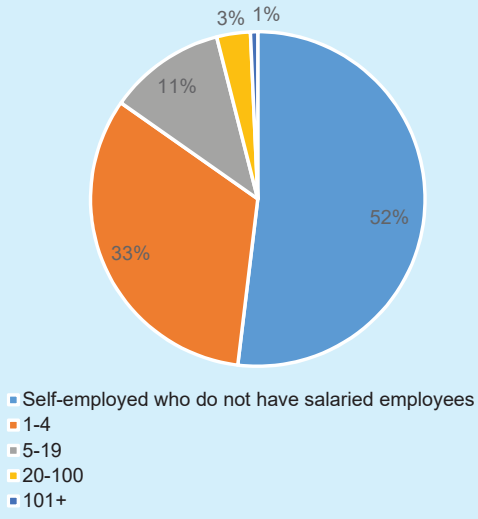
[8] The estimate was constructed as the product of the number of businesses that reported a drop of at least 80 percent in their revenue in July–August and the median revenue of businesses in each group by business size. The median revenue in 2019 was estimated on the basis of data for May-August 2019, which appear in the Israel Tax Authority reports.

respectively). Meanwhile aggregate business revenue in the economy is about NIS 2 trillion. On the assumption that the revenue of a business is the upper bound of its value added, it can be concluded—based on the low aggregate revenue of small and micro businesses that experienced a significant slowdown in their activity—that the effect of their closure on total business output would not be substantial.[9]

On the assumption that the total credit provided to a business is correlated with its revenue, it can be assumed that the effect of the closure of small and micro businesses on credit losses in the financial system would also not be substantial.[10]

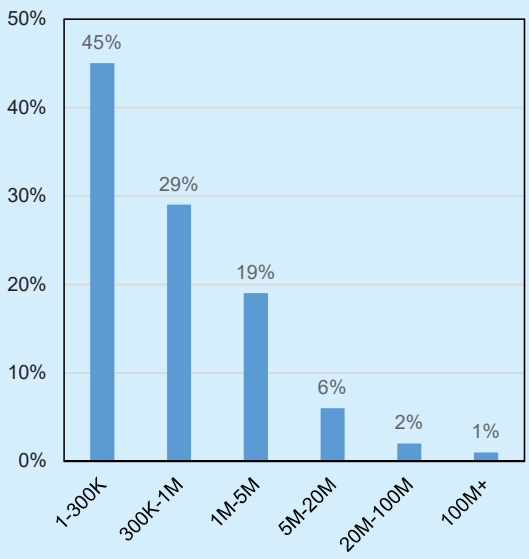
In the next stage, we will attempt to estimate the effect of the closure of businesses whose revenue dropped by 80 percent or more on the labor market. Figure 4 presents the breakdown of businesses in Israel according to number of employees, while Figure 5 presents their breakdown according to size (in terms of revenue). Figure 4 indicates that 52 percent of the businesses in Israel are self-employed individuals without any employees. Figure 5 indicates that 45 percent of the businesses in Israel are micro businesses with revenue of less than NIS 300,000. It can be assumed that there is a significant

Figure 4
Distribution of Businesses by Number of Salaried Employees, 2019



SOURCE: Based on Central Bureau of Statistics, "The Demography of Businesses - Survival and Movement of Businesses, 2017–2019".

Figure 5
Distribution of Businesses by Turnover Size Group, 2019



SOURCE: Based on Israel Tax Authority Reports.

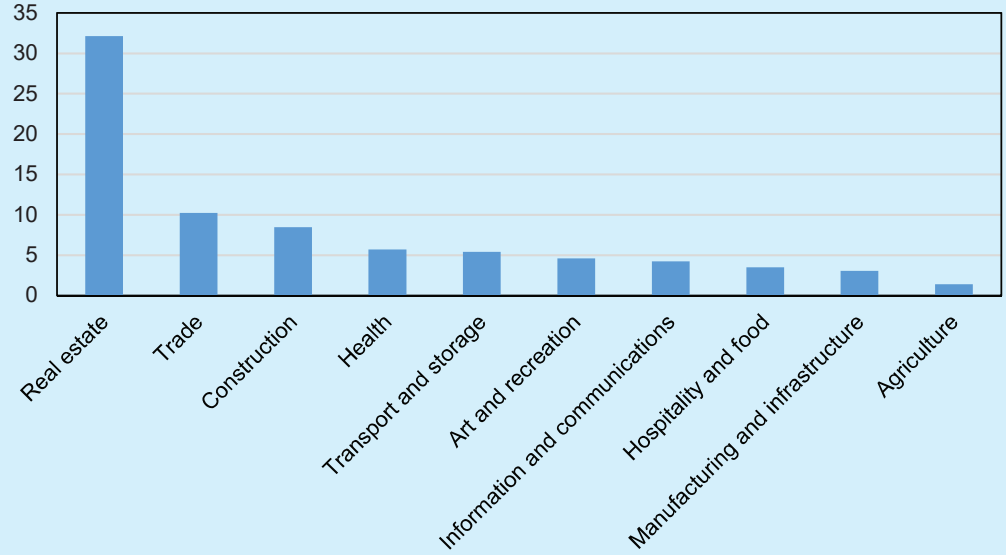
[9] Due to data constraints, it was not possible to directly calculate the aggregate added value of businesses whose risk of closure had increased.

[10] It should be noted that not every closure of a business is expected to result in credit losses for the capital providers. This partly depends on the reason for the closure: Closure due to financial or operational difficulties as opposed to voluntary closure; the business's financial profile; the quality of the collateral; etc.

overlap between the two groups, since a large proportion of the micro businesses with revenue of up to NIS 300,000 are self-employed individuals who do not have any employees. It is therefore reasonable to assume that a large proportion of businesses with a revenue of less than NIS 300,000 that did not report any activity in July–August are self-employed individuals without any employees.

The effect of business closures on the labor market in a particular industry is derived from the number of businesses closed in that industry and the number of employees employed by them.[11] It is therefore possible to derive the effect on the labor market of a possible closure of businesses with a decline of 80 percent or more in their revenue during the crisis by combining the data presented in Figure 6 for the number of businesses that recorded a major drop in their revenues in each industry with the data in Figure 7 on the breakdown of businesses according to number of employees.

Figure 6
Businesses that Recorded a Decline in Turnover of at Least 80 Percent in July–August, by Industry

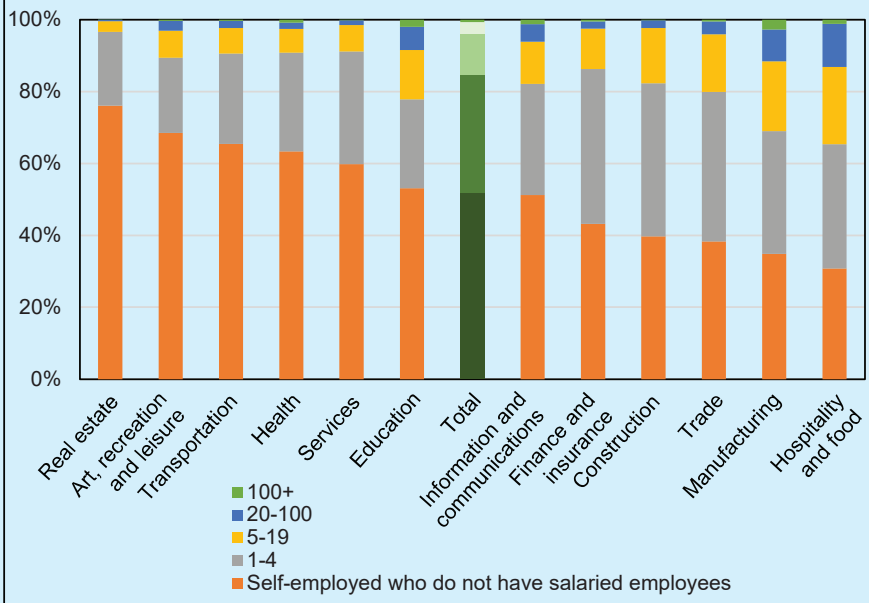


SOURCE: Based on Israel Tax Authority Reports.

[11] It goes without saying that the situation of the labor market in a particular industry is also affected by the number of businesses opened. However, at the time of writing, this information was not available to us.

Figure 6 indicates a relatively large number of businesses whose situation deteriorated to the point of closure in the real estate industry and in the services industry.[12] Nonetheless, against the background of the high proportion of self-employed individuals without any employees in these industries, the average effect of a business closure in these industries on the labor market is limited. In contrast, few businesses in the hospitality and food industry experienced a slowdown in their activity. However, due to the relatively high proportion of businesses with employees in this industry, the average effect of a business closure in this industry on the labor market is greater than in the real estate and services industries. In the art and entertainment industry, there are both relatively few businesses whose risk of closure increased and a relatively high proportion of self-employed without employees. This combination likely implies that the closure of businesses in this industry is not substantial. In contrast, it appears that the risk of closure increased among a relatively large number of businesses in the trade industry, and that the proportion of self-employed without employees in this industry is relatively small. Thus, the average effect of business closures in this industry on the labor market is not insignificant.

Figure 7
Distribution of Businesses in Each Industry by their Salaried Employees, 2019



SOURCE: Based on Central Bureau of Statistics, "The Demography of Businesses - Survival and Movement of Businesses, 2017–2019".

[12] The services industry is composed primarily of businesses that provide professional, scientific, and technical services. The real estate industry is composed primarily of businesses that lease out buildings. Revenues in these industries are dependent to a large extent on the income of businesses in other industries to which they provide services. Therefore, the overall downturn in the business sector during the COVID-19 crisis was reflected in a relatively sharp drop in the activity of businesses in the services industry and the real estate industry.

In conclusion, the number of businesses that experienced a significant slowdown in their activity increased during the COVID-19 crisis, as did their risk of closure. Yet at the same time, a significant proportion of them are small and micro businesses, and the effect of their possible closure on GDP, the credit risk of capital providers, and the labor market is limited. Nonetheless, additional periods of restrictions on business activity are liable to create a negative cumulative effect on their situation and to threaten their ability to survive, while increasing the probability that their risk of closure will be realized.

Box 4.3

KINEMORTOPHOBIA[1] DURING THE PANDEMIC OR "WHO'S AFRAID OF ZOMBIE COMPANIES?"

In a competitive market environment, the business landscape is constantly changing. New and more efficient inputs and production processes replace old ones, and less stable and less competitive businesses cease to exit. New industries emerge and old ones decline. Schumpeter (1950) termed this a process of "creative destruction". Interference with this mechanism of evolution, whether it is initiated or endogenous, disrupts the resource allocation process in the economy. In this context, and from the perspective of the dramatic developments in the business sector during the past year, we focus on one of the most prominent issues discussed in the economic literature, namely that of zombie firms—poorly performing companies that do not manage to cover their debt service costs (principal) over time, but continue to operate in the market thanks to "artificial resuscitation" that allows them to refinance their debt.[2]

The phenomenon of zombie companies has been known since the late 1980s. However, the public discourse on the phenomenon has accelerated considerably over the past decade. As a result of the very low interest rate environment over a prolonged period of time, there were increasing warning signs with regard to business behavior in general and the lifecycle of firms in particular. It is claimed that easy access to money and a biased allocation of credit have led to the preservation, and even the encouragement, of the zombie phenomenon (Midrigan and Xu, 2014). The efforts of central banks and governments to mitigate the destructive effects of the COVID-19 crisis by means of assistance to the business sector[3] have made those voices even louder. Thus, although this support is an important policy tool and a decisive factor in the attempt to maintain the functioning of the market and business continuity, grants and state-guaranteed loans have reignited the discussion of whether there is a danger of zombification of the economy (Caballero, Hoshi and Kashyap, 2008)[4] or, in other words, an increased potential for the distortion of market mechanisms and harm to recovery efforts and long-term productivity (Andrews et

[1] From the Greek: Kine – movement; morto – death; phobia – fear. Kinemortophobia – fear of the walking dead, i.e., zombies.

[2] The economic literature suggests various methods for measuring and defining zombies (OECD, 2018). The most common definition depends on two parameters: (1) the company's interest coverage ratio is less than 1 for a period of two years; and (2) Tobin's Q is less than the industry median, if it is a publicly traded company for a period of two years. An alternative definition is a company that is over 10 years old and is unable to meet its interest payments (1>ICR).

[3] According to the OECD (2020), the volume of assistance provided to companies in order to stabilize the activity of the business sector varies greatly across countries. Thus, for example, in Sweden the grants provided totaled $320 million (0.06 percent of GDP) and in New Zealand they totaled about NZD 1.7 billion (0.6 percent of GDP); in contrast, in Germany, they reached $610 billion (about 15 percent of GDP), in Canada, they reached $30 billion (1.3 percent of GDP) and in Switzerland they reached $40 billion (6 percent of GDP). Even developing countries such as Brazil, South Africa, and Thailand are allocating the resources required to support business as part of a government assistance program. For further details, see also: "Support for Business during the Coronavirus Crisis", (Institute for Government, 2020).

[4] Zombification of the economy describes a situation in which public support programs and bank loans keep nonsustainable companies (zombies) alive. This term came into common use following the crisis in Japan in the 1990s, which included a collapse of real estate prices, a prolonged period of low growth (stagnation), and a drop in productivity, which led to an increase in the number of zombie companies, the weakening of the banking system, and reduced investment in healthy companies. For an up-to-date description of the background and dangers of zombification, see various articles in T*he Financial Times* and *The Economist*, as well as BIS (2020).

al. 2018; Banerjee and Hoffmann 2018, 2020; Schivardi, Caballero et al. 2008; Andrews and Petroulakis, 2019; Blattner et al. 2019; Acharya et al. 2019, 2020; Tracey 2019).[5]

Financial support from governments and central banks can therefore have an effect on the scope of the phenomenon. Thus, although government support programs, which totaled about NIS 40 billion in Israel (and whose take-up rate was more than 52 percent), provide relief for cash-strapped companies and make it possible for sustainable companies experiencing a shortage of liquidity to survive the shock, they delay "creative destruction"[6], increase the budgetary burden, and are liable to create moral hazard due to their nondiscriminatory nature. This is due to the lack of an efficient approval mechanism that can ensure that assistance is focused on companies that truly need it. The central bank programs to provide liquidity to the banks (by means of monetary loans, the goal of which is to increase the supply of credit to companies by means of the banking system's allocation mechanisms) operate in a similar manner. Since leveraged companies benefit from a relatively high survivability potential in a low interest rate environment, these monetary instruments are liable to camouflage the development of zombies, prevent reorganization, and preserve zombies for an extended period. However, it should be emphasized that an empirical test did not find a significant link between low interest rates and the frequency of the zombie phenomenon worldwide (Obstfeld and Duval, 2018; Bindseil and Schaaf, 2020). In contrast, there is widespread consensus that sufficient capitalization, alongside the efficiency of the regulatory frameworks in dealing with bankruptcy, limits the banks' incentive for evergreening, i.e., supporting companies and refinancing their loans in order to prevent the recognition of credit losses, and the financing of zombies (Acharya et al. 2020; Caballero et al. 2008; Andrews and Petroulakis, 2019; Giannetti and Simonov, 2013; Schivardi et al., 2019).

In view of the massive government assistance, which was indeed called for in 2020, it appears that zombie companies have become a worldwide phenomenon. Deutsche Bank estimates that about 20 percent of publicly traded companies in the US are currently zombies, a level that is twice as high as in 2013 (T. Slock, DB Securities, 2020). This figure is also consistent with Bloomberg's estimates, according to which about 15 percent of companies in the Russell 3000 Index, whose debt totals $1.36 trillion, are zombies, as opposed to only 8 percent in 2008. It is also close to the 17 percent that prevailed at the beginning of the millennium (during the dotcom bubble). According to Creditreform (2020), one-sixth of the 550,000 companies in Germany can be classified as zombies. The level is above 20 percent in the UK, Canada, Spain, and Greece, while the rate of zombie companies is 21 percent in Japan and 18 percent in South Korea. It was also found that 25 percent of European companies finished 2020

[5] Empirical findings show that zombie companies constitute a major barrier to economic growth. Thus, according to the BIS (2020), an increase in the proportion of zombie companies in the developed economies lowers productivity by 0.3 percent on average. According to an analysis carried out by the OECD, productivity in Italy and Spain would be higher by one percent if there were no zombie companies located there, and in Japan more than one-third of the drop in aggregate output during the last decade is attributed to zombie companies.

[6] In 2020, there was no massive wave of company bankruptcies in Israel. The number of bankruptcy requests submitted to the courts by corporations (primarily companies) was not high and grew last year by only 2 percent (from 1,180 in 2019 to 1,200 in 2020), which was much less than expected in view of the pandemic. This level is also lower than expectations following the amendment of the bankruptcy laws, which went into effect in September 2019 and made the process faster and more streamlined. The main explanation for this is that the economy benefited from the effect of economic "pain relievers", namely furloughs that reduced a major expenditure for companies, business grants and loans, deferral of debt payments, and more.

without any financial reserves, i.e. with only negligible working capital and without any cash reserves. Unsurprisingly, companies in the services, transportation, and real estate industries are particularly prominent in a breakdown by industry. The onset of the COVID-19 pandemic increased the number of businesses on the brink of financial failure and created super-zombies—impaired companies with particularly large debt appetites. Thus, since the outbreak of the pandemic, zombies have been responsible for a considerable increase of one trillion dollars in worldwide debt (Bloomberg, 2020).

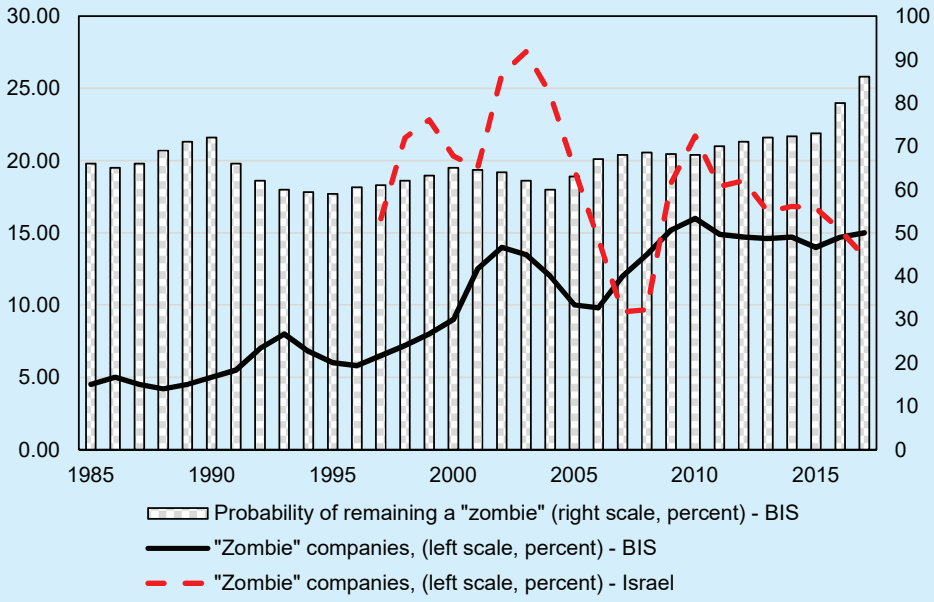
However, zombies became common well before the COVID-19 crisis. An analysis of companies in 79 countries during the 2005–2016 period showed that about 10 percent of them, on average, were defined as zombies (Ghoul et al., 2020). In a recent study, based on public companies, Banerjee and Hofmann (BIS, 2020) estimated that the proportion of zombie companies in advanced economies increased from 1 percent in 1990 to 15 percent in 2017 (Figure 1).[7] The main reasons for the observed trend were, in the researchers' opinion, low interest rates that reduced debt repayments, and the choice by banks to follow a policy of evergreening.

An examination of this issue in Israel prior to the crisis indicates that the proportion of zombies among public companies was not insignificant. As in the case of the BIS findings, their proportion reached a peak in 2010 and has since diminished (Figure 1). Recently, however, the trend has ended (with the share of zombie companies at 12 percent in 2018 and 2019). The highest proportions of zombies among public companies in Israel are in the oil and gas and biomed industries (22 percent), the manufacturing industry (17 percent), and the real estate industry (10 percent). Nonetheless, it should be noted that companies in the biomed industries (as well as in oil and gas) have unique cost structures, which are characterized by low revenues during their initial years of operation, and the indicated scope of this phenomenon is therefore biased, apparently upward. In absolute numbers, the manufacturing and real estate industries have the highest number of zombie companies. It appears that, as in the BIS findings, these companies are the most leveraged in Israel and invest less in R&D. Zombie companies' share of total liabilities during the decade prior to the current crisis was about 20 percent on average. Earlier in the period, they were led by holding and investment companies and pyramids, and in later years by biomed companies and oil and gas exploration companies, which as mentioned are characterized by a unique cost structure. Zombie companies' share of liabilities (according to par value) in the corporate bond market is about 5 percent. It should be emphasized that the population of public companies is not necessarily representative in Israel, or in other countries.[8] This is due to the relatively large size of these companies and the variety of financing alternatives available to them. Indeed, an examination of the scope of the phenomenon among more than 600,000 businesses on the basis of models for estimating a firm's financial resilience (failure score data

[7] The research found that zombies are usually smaller companies that are highly leveraged and have relatively low productivity. They grow at a slower rate in terms of assets and number of workers, and they invest less in tangible and intangible assets. Zombie companies obtain subsidized credit because the interest rate they pay is similar to that paid by other companies, despite the fact that their productivity is lower and their risk of bankruptcy is higher. Zombie companies' share of total assets and total liabilities is 6–7 percent on average per country.

[8] The identification of zombie companies today is a particularly complex exercise, since it is difficult to estimate how the COVID-19 crisis will affect the business model of many companies in the medium and long terms. This is due to changes in future demand patterns in a number of fields, such as transportation, tourism, services, and commercial real estate. Furthermore, the central banks' involvement in the markets distorts the value of the companies and the ability to estimate the level of liquidity that is available to them for redeeming debt.

Figure 1
"Zombie" Companies (BIS and Israel Sample)



SOURCE: Banerjee and Hofmann (BIS,2020) and based on Tel Aviv Stock Exchange data.

calculated by D&B) shows that during the years prior to the COVID-19 crisis (2014–19), close to 40,000 businesses (about 7 percent of all active companies) on average were defined as zombies—companies with low or particularly low repayment ability—and about 98 percent of them were micro companies. The implication is that alongside the natural dynamic of the lifecycle of firms in the economy, which is reflected in the closure of active businesses (estimated at about 40,000 to 50,000 per year), a similar percentage of companies have the status of particularly low repayment ability (zombie companies).

The harm caused by zombie companies is ongoing. According to the findings in BIS (2020), companies are remaining in this situation for longer than in previous years (Figure 1). Moreover, of the roughly 60 percent of companies that manage to improve their situation so as not to be included in this undesirable category, many nonetheless experience long-term weakness in productivity, profitability, and growth, resulting in low long-term performance. In addition, it was found that the chance of former zombie companies again becoming zombies is three times higher than companies that were never in that category. It therefore appears that the zombie disease also causes long-term damage to businesses that recover from it. The likelihood of remaining in the zombie category in Israel, which was calculated on the basis of failure scores using two-year transition matrices between risk categories, has risen significantly in recent years, as was found by the BIS research, and has settled within the range of about 65–78 percent on average (Table 1).

Table 1: Two-year transition matrix between risk categories (2017–19)				
The situation in the previous year/ The situation in the current year	Lower than average risk of failure	Higher than average risk of failure	Particularly high risk of failure	Inactive business
Lower than average risk of failure	89	0.2	1.1	9.9
Higher than average risk of failure	8.1	78	5.6	8.4
Particularly high risk of failure	0.8	15	64.8	19.4
SOURCE: Based on D&B Israel.				

Given the findings, the question arises of how to deal with the "walking dead". Policy measures that are meant to deal with the phenomenon, such as permanent closure of the companies, employee layoffs, and payment to creditors, are liable to deepen the current slowdown and transform it into a long-term recession. Under certain circumstances, the current phenomenon of zombie companies in Israel appears to be a limited problem rather than a long-term threat. Assuming that the deviation from the "creative destruction" process continues for only a short time—until the end of measures to deal with the pandemic and a broadly based and continuous opening of the economy—the suboptimal allocation of resources is expected to be tolerable. However, if the pandemic continues for a longer period and the lockdown policy remains in force, the damage to the real economy and to the natural selection mechanisms will grow. Nonetheless, and in contrast to previous crises, there are at least three factors that should ease the recovery process and mitigate the phenomenon:

- First, the shock of the pandemic has harmed companies in industries with a relatively high potential for recovery. The damage caused was not the result of excess risk taken on by the companies or the banks, as wasthe case in the Global Financial Crisis. The unique character of the crisis meant that many companies that are ostensibly characterized as zombies are simply sustainable companies that are experiencing a temporary liquidity shock due to the restrictions that led to the collapse of aggregate demand.
- Second, in comparison to previous crises (2008–09 and 2011–12), the current crisis found the banks with relatively high capital buffers and resilience, and therefore able to absorb credit losses to a greater degree. They also have the ability to absorb the expected rise in bankruptcies next year. This should also reduce their incentive for "perpetual rollover" and the financing of zombies.
- Third, the health and economic consequences of the pandemic led to a particularly large scale of government support, which limited the decline in liquidity levels and significantly reduced the risk that the liquidity crisis would become a solvency crisis. An examination of the take-up level of the state-guaranteed funds indicates that in fact the segment of companies with the highest risk—namely micro companies, among which the proportion of zombie companies is the highest—is characterized by a low take-up level of the fund in the designated track. Thus, less than half of the allocated amount was used (usage of NIS 1.7 billion by 4,195 companies whose requests were approved). It appears that the low take-up rate of this fund is explained by its more stringent conditions relative to the regular track.

In conclusion, the intensity of the current shock called for large-scale government intervention in order to prevent a high level of financial distress in the economy (Gourinchas et al., 2020). It is worthwhile developing efficient and implementable approval mechanisms that will ensure that support is channeled only to companies that are sustainable despite their current low liquidity. Carrying this out during the crisis is especially challenging, and government intervention is therefore a compromise between maintaining the functioning of the economy and the risk of continuing to finance companies that are on the brink of bankruptcy (Gagnon, 2020). On the other hand, there are growing voices calling for preventative measures (G30, December 2020), a position that calls for decision makers to make the hard choices according to widely accepted principles, including a shift from large-scale direct support for businesses to measures focused on industries and companies with a relatively high potential for sustainability; limiting the support only to industries and companies for which there is solid evidence of a market failure; creation of collaborations with the private sector for the purpose of financing and reorganization of debt; steps to increase the capital component of the companies and conditioning support on its proportion of total assets; and strengthening the regulatory mechanisms to deal with bankruptcies while maintaining economic recovery.

References

Acharya, Viral V., M. Crosignani, T. Eisert, and C. Eufinger (2020). "Zombie Credit and (Dis-)Inflation: Evidence from Europe", No. w27158. National Bureau of Economic Research.

Acharya, Viral V., T. Eisert, C. Eufinger, and C. Hirsch (2019). "Whatever It Takes: The Real Effects of Unconventional Monetary Policy", *The Review of Financial Studies*, 32(9): 3366–3411.

Andrews, D., M. A. McGowan, and V. Millot (2017). "Confronting the Zombies: Policies for Productivity Revival", OECD Economic Policy Paper No. 21.

Andrews, D. and F. Petroulakis (2019). "Breaking the Shackles: Zombie Firms, Weak Banks and Depressed Restructuring in Europe", ECB Working Paper 2240.

Banerjee, R. N. and B. Hofmann (2018), "The Rise of Zombie Firms: Causes and Consequences", *BIS Quarterly Review*, September: 67–78.

Banerjee, R. N. and B. Hofmann (2020). "Corporate Zombies: Anatomy and Life Cycle", BIS Working Paper No. 882.

Blattner, L., L. Farinha, and F. Rebelo (2019), "When Losses turn into Loans: The Cost of Undercapitalized Banks", ECB Working Paper No. 2228.

Caballero, R., T. Hoshi, and A. Kashyap (2008). "Zombie Lending and Depressed Restructuring in Japan", *American Economic Review*, 98(5): 1943–1977.

Ghoul, S., Fu Zhengwei, and G. Omrane (2020). "Zombie Firms: Prevalence, Determinants, and Corporate Policies", Available at SSRN: https://ssrn.com/abstract=3740950.

Giannetti, M. and A. Simonov (2013). "On the Real Effects of Bank Bailouts: Micro Evidence from Japan", *American Economic Journal: Macroeconomics* 5(1): 135–167

Gourinchas, P-O, S. Kalemli-Ozcan, V. Penciakova, and N. Sander (2020). "COVID-19 and SME Failures", NBER Working Paper No. 27877.

Midrigan V. and D. Yi Xu (2014). "Finance and Misallocation: Evidence from Plant-Level Data," *American Economic Review*, 104(2): 422–458.

Obstfeld, M. and R. Duval (2018). "Tight Monetary Policy is Not the Answer to Weak Productivity Growth", VoxEU.org, 10 January.

Schivardi, F., E. Sette, and G. Tabellini (2017). "Credit Misallocation during the European Financial Crisis", CESifo Working Paper Series 6406.

Schivardi, F., E. Sette and G. Tabellini (2020). "Identifying the Real Effects of Zombie Lending", *Review of Corporate Finance Studies*, 9(3): 569–592.

Schumpeter, J. A. (1950). *Capitalism, Socialism and Democracy*, 3rd edition, Harper.

Tracey, B. (2019). "The Real Effects of Zombie Lending in Europe", Bank of England Working Paper No. 783.