Chapter 4
Sources of Financing for the Economy

- The sources of financing available to the nonfinancial business sector were characterized by strong growth in 2021. This was the result of increased demand for the financing of real economic activity, particularly in the construction and real estate industry and in high-tech, alongside greater supply due to regulatory measures.
- Business debt rose sharply as did the business debt to GDP ratio. Nonetheless, the ratio remained low relative to other countries. Part of the explanation may lie in the activity of multinationals, particularly in Europe.
- Large and mid-sized businesses were the leaders in obtaining business credit from the banks—with the construction industry showing particularly high rates of growth—and from the nonbank sector. Small businesses obtained less credit than large and mid-sized businesses.
- The wave of offerings on the stock exchange increased, in view of rising financial asset prices. High-tech companies accounted for a large proportion of the issuers, due to the rapid growth in demand for technology and the low interest rates.
- The proportion of direct holdings of corporate bonds and shares in household portfolios grew during the COVID-19 pandemic, and is similar to the proportion of these risk assets held indirectly by households through the mutual funds. This implies that the risk of a large-scale selloff in the event of a crisis is greater than what is indicated only by their holdings of risk assets through the mutual funds.
- Households' housing debt increased sharply, together with an increase in the average mortgage size, in view of the acceleration in housing price increases.
- Despite the greater uncertainty having to do with the pandemic, mortgage leverage levels increased. In particular, there was an increase in the share of mortgages at the highest level of leverage permitted under the Banking Supervision Department directives.
- As the economy recovered, there was a decline in the activity of the programs to support the supply of credit to small businesses—programs that were implemented as part of the response to the pandemic: the State-backed funds and the monetary loans provided by the Bank of Israel, which reached full utilization.
- In 2021, the Knesset approved an important capital market reform, which ended the possibility of pension funds investing in earmarked bonds and replaced them with a guaranteed return on 30 percent of their asset portfolio. As a result, pension funds will have direct the funds that would have been invested in earmarked bonds to other instruments. An analysis of the various scenarios shows that the result may be increased investment abroad, which will increase the share of foreign assets in the pension funds' portfolios.

1. MAIN DEVELOPMENTS

This section analyzes the developments in the sources of financing for the nonfinancial private sector (households and businesses) in Israel. This financing is used for consumption and investment, which accounts for its importance to economic activity. We will describe the main changes in the economy's debt in 2021 and their connection to the long-term trends in economic activity.

As housing prices rose, housing credit and credit to the construction and real estate industries grew. As financial asset prices increased, there was an unprecedented wave of issuances on the Israeli stock exchange.

The main development in 2021 was a sharp increase in asset prices. This was reflected in higher housing prices, which led to substantial growth in housing credit and credit to the real estate and construction industry, and in higher prices for financial assets. This supported an unprecedented wave of issuances on the Tel Aviv Stock Exchange (TASE), which helped to diversify the economy's sources of financing, as equity became more important than in previous years.

Economic activity in 2021 was affected by the fluctuations in the rate of COVID-19 morbidity. Economic activity was low early in the year due to the third wave. It shifted to strong growth following the conclusion of the third wave and stabilized with the beginning of the fourth wave, which led to a re-imposition of numerous restrictions, though not to a lockdown. (For further details on real economic activity, see Chapter 2 of this report.) Overall, economic activity in 2021 recovered to a great extent relative to 2020, and the economy demonstrated impressive abilities to adapt and recover.

With the increase in asset prices and the recovery in the real economy, the financial system (which is meant to support real economic activity) operated at a high level of activity relative to previous years. The ability to obtain credit returned to precrisis levels, apart from particularly vulnerable industries such as hotels, in which the difficulty in obtaining credit continued during the course of the year. The high level of activity in the financial system is a result of the increased demand for credit due to the rise in asset prices and increased real activity (particularly in the construction and real estate industry).

Private debt—both business debt and household debt, whether to the banks or to nonbank entities—grew at a substantial rate during the year relative to previous years. All industries significantly increased their debt to the banks, particularly large and mid-sized businesses. Total debt to the banks exceeded the total to nonbank lenders for the first time since 2014. The growth of debt in the construction industry and the real estate activities industry (the activity of which is primarily in the leasing of offices) was particularly high, but was differentiated by the manner of financing. The banks were the main source of financing for the construction industry while the real estate activities industry mainly used nonbank credit.

The high growth in debt was also reflected in an increase in the business debt to GDP ratio. This is primarily explained by the increase in business debt as a result of the growth in fixed capital formation and the greater ease in obtaining credit. However, even after the increase, Israel's ratio is still low relative to other countries. The low business debt to GDP ratio in Israel is discussed in Box 4.1 in this chapter, based on new data that makes it possible to suggest another explanation for the phenomenon.

In addition to the description of the main trends that characterized business debt and household debt during the year, Box 4.4 in this chapter discusses the reform in the long-term savings market, which ended the issuing of earmarked bonds. These are bonds issued by the government to long-term savings institutions—primarily the new pension funds—for the purpose of guaranteeing the return on part of the savings they manage. In place of those bonds, a “guaranteed return” mechanism will be introduced which will likely have an effect on the way in which assets are allocated in the funds’ portfolios. The chapter looks at a number of future scenarios and discusses the implications of each.

In view of the changing state of morbidity, the State-backed funds that were established in 2020 continued their activity, with the goal of providing businesses with liquidity on convenient terms. During the third lockdown, at the beginning of 2021, the total weekly number of requests for new credit grew. However, following the exit from the lockdown and the renewal of economic activity, the trend reversed and began to decline. This continued throughout the rest of the year and was accompanied by a drop in total new credit. The moderating of the fund’s activity was a result of the economic recovery and the easing of cash flow difficulties. This is reflected in the greater ease in obtaining credit during this period and an associated decline in demand for credit.

In 2021, the Bank of Israel discontinued its provision of long-term loans to the banks, a program that was initiated in 2020. Its main goal was to increase the supply of credit to small and micro businesses. Another goal was that the low interest rate would also be reflected in the price of loans to this sector. The tool was used to distribute NIS 40 billion by July 2021, which was the limit of the fund.

In recent years, there has been considerable progress in lowering the barriers to competition as a result of numerous regulatory changes, which are expected to have a continuing effect on increasing competition in the financial market in the future. Among the most significant measures implemented, it is worth mentioning the lowering of interchange fees, the reduction in capital requirements to establish a bank, making information more available to financial participants (“open banking”), the creation of a credit database and “one-click mobility” between banks.

In addition to these measures, and as part of the Law for Increasing Competition and Reducing Concentration in the Banking Market in Israel, a reform is being implemented in the consumer credit and business credit market, which is intended to increase the level of competition in credit provision to consumers and small businesses. Within this context, the large banks sold their holdings in the credit card companies. The rules of the reform have so far been implemented by Bank Hapoalim and Isracard, and Bank Leumi and MAX. At the beginning of 2023, the Minister of Finance is meant to decide, in consultation with the the Governor of the Bank of Israel, if there is a need to separate CAL from Discount Bank. The reform’s rules establish that the consumer credit frameworks provided by the large banks will be temporarily and significantly reduced, with the goal of facilitating the shift of credit lines to the separated credit card companies.[1] Another function of the committee is to determine whether the changes implemented in recent years have actually increased competition. According to the analysis that appeared in the implementation committee's third report in August 2021, there was an increase in competition both in consumer credit and credit to small businesses. The analysis was based on the period prior to the pandemic, in view of the difficulty in isolating risk during the crisis. One of the findings with respect to this period—which points to an increase in competition in consumer credit—is presented in Bank, Segev and Stone (2022)[2]. The authors find that the "trapped customer premium" (the additional interest paid by a credit customer to the bank at which he maintains his checking accounting) has declined since the credit database was created.

2. BUSINESS DEBT

Business debt increased sharply during 2021 in both the banking and nonbanking channels. The bank interest rate on this debt remained relatively constant during the year in the various industries and for all firm sizes, while there was some an increase in the yield on two-year unindexed government bonds. (Most business debt is for short maturities of up to two years.) The increase in total credit alongside stability in its price may be an indication of growth in both the supply of credit (due to the removal of restrictions) and the demand for credit (due to the increases in asset prices and in economic activity).

Table 4.1: Business sector financing channels

(current prices, NIS billion)

	End-of-period balance, NIS billion						Change in balance during the period, percent		
	12-2019	12-2020	12-2021	6-2021	9-2021	12-2021	2019	2020	2021
Loans from banks	459	488	574	516	538	574	4.7%	6.4%	17.6%
Tradable bonds in Israel	205	212	235	217	229	235	0.1%	3.8%	10.8%
Nontradable bonds and nonbank loans[a]	116	112	112	113	112	112	8.0%	-3.2%	0.1%
of which : Loans from institutional investors	87	86	88	86	86	88	11.2%	-0.5%	1.4%
Debt raised abroad[b]	177	168	181	186	183	181	1.3%	-5.0%	7.8%
of which : Loans from nonresidents[c]	150	133	139	143	141	139	3.0%	-11.3%	4.5%
bonds	27	35	43	43	42	43	-7.0%	30.1%	20.3%
Total business sector debt	**956**	**981**	**1103**	**1032**	**1062**	**1103**	**3.4%**	**2.6%**	**12.5%**

[a] Comprised of loans from institutional investors and from credit card companies. Until August 2013, mortgage-backed loans from institutional investors were included in household debt.

[b] Including foreign holdings of Israeli corporate bonds, and loans from abroad.

[c] The reported balance of credit from nonresidents is based on reports by businesses in the Israeli economy.

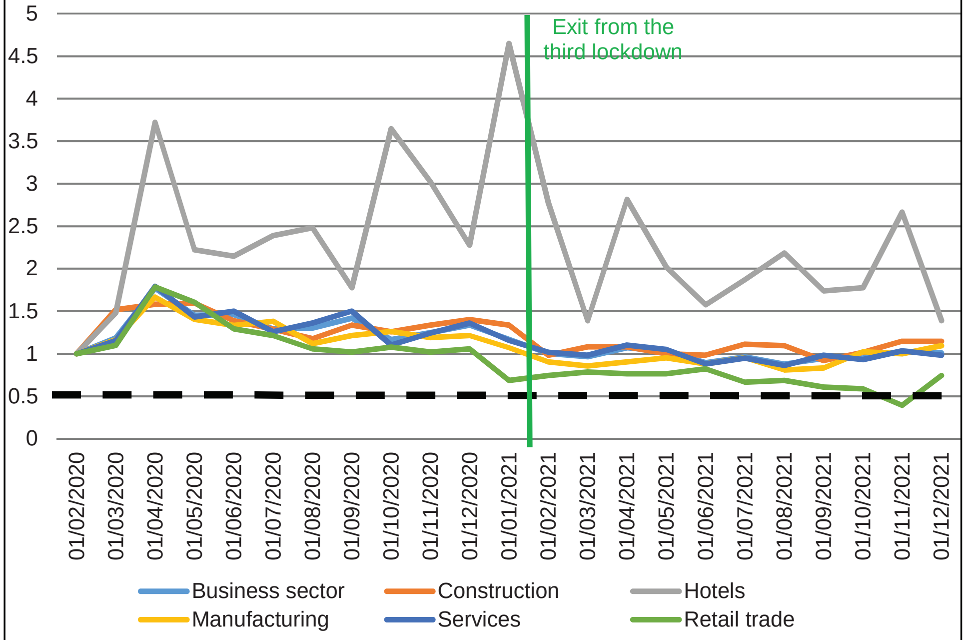
1 The two largest banks were required to reduce the credit facilities on credit cards by 45 percent for each of their customers, based on their levels at the end of 2015, subject to a minimal monthly threshold of NIS 7500. According to the recent decision by the Knesset Economics Committee, they will be required to cut an additional 5 percent in 2022.

2 Forthcoming as a Bank of Israel working paper.

An analysis of business debt by industry shows that growth was concentrated in the construction and real estate industry, in view of regulatory changes and the loosening of restrictions introduced in recent years (as described in Chapter 4 of the Bank of Israel Annual Reports for 2019 and 2020 and the section on business debt to the banks in this chapter). In contrast, the industries that are more sensitive to the effects of the pandemic and the restrictions continued to experience difficulties in obtaining credit, particularly during the lockdowns. The difficulty in obtaining credit has returned to its precrisis level, with the exception of the hotel industry, where it remains higher (Figure 4.1).

Credit to the construction and real estate industries increased sharply, in view of the easing of restrictions in recent years. In contrast, industries that are more sensitive to the health restrictions (such as the hotel industry) continued to experience difficulty in obtaining credit.

Figure 4.1
Limitaitons on Bank Credit Compared to the Precrisis Levels, by Industry



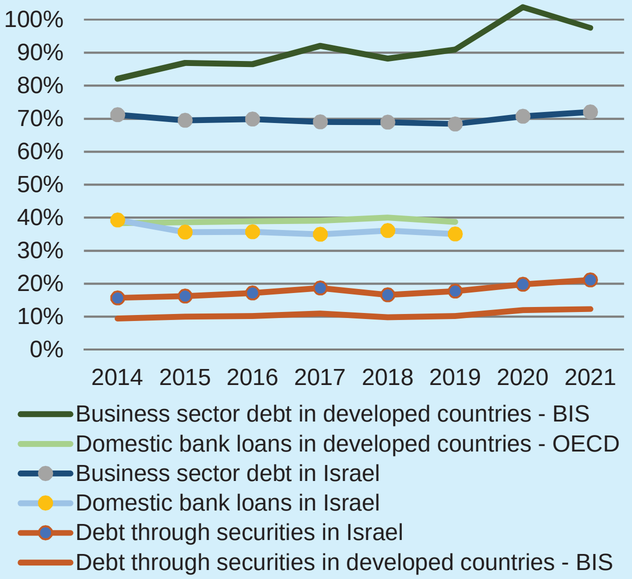
SOURCE: Based on Central Bureau of Statistics Business Tendency Survey.

BOX 4.1: THE BUSINESS DEBT TO GDP RATIO RELATIVE TO OTHER COUNTRIES

- The business debt to GDP ratio in Israel was 26 percentage points lower than the OECD average.
- The conventional explanation cites the economy's structure and the relatively moderate volume of nonbank credit providers' activity in Israel as the main factors.
- In this box, we suggest another explanation for the gap, namely the activity of multinational companies whose behavior is influenced by differences in tax rates between Israel and other countries, particularly those in Europe.

The business debt to GDP ratio in Israel, which is meant to reflect the amount of business borrowing relative to the volume of economic activity, is lower than in other countries (Figure 1). The gap between Israel and the average of the developed countries was 26 percentage points in 2021. The low ratio in Israel relative to other developed countries is an issue for decision makers since it raises questions as to the financing difficulties experienced by Israeli companies. Several possible factors have been suggested to explain the gap between Israel and other countries, including the high proportion of services and high-tech companies, which are characterized by relatively low debt levels, in Israel's GDP; the Concentration Law; and the process of dismantling business pyramids. This process has led to a downward trend in business debt since it limits the acquisition of companies and the use of loans to do so. The upward trend in the use of internal sources of financing has also contributed to the downward trend in the use of debt by public companies since 2008. (For further details on these topics, see the Bank of Israel Annual Reports for 2018 and 2019.) In this box, we will present another factor that may explain the gap between Israel and other countries in the level of business debt, namely the activity of multinational companies. These companies choose to obtain credit abroad, rather than in Israel, in order to exploit differences in taxation between Israel and other countries.

Figure 1
Business Sector Debt as a Percentage of GDP, Total, Loans, and Securities, Israel and Average of the Developed Countries, January 2014–June 2021



* Data on business sector debt are calculated according to BIS definitions and data, including loans and securities from all sources.
** Data on loans and tradable debt are calculated according to the OECD and BIS definitions accordingly.
SOURCE: Based on BIS and OECD.

An examination of business debt levels in Israel and other developed countries according to source of credit shows that debt obtained by means of issuing securities in Israel is actually about 9 percent of GDP higher than the average for the developed countries[1] (Figure 1). Furthermore, Israel's total loans to the business sector from domestic banks as a share of GDP[2] is about 4 percentage points less than the OECD average (Figure 1).[3] Therefore, most of the gap in business debt between Israel and other countries is a result of the "residual", which primarily consists of loans from financial and nonfinancial nonbank entities or loans from abroad. The nonbank financial entities in Israel are less developed than in other countries, and therefore provide relatively little credit, a phenomenon that apparently explains part of the "residual" between Israel and other countries. This subject was recently discussed in the box entitled "The risk implicit in the activity of nonbank credit providers" in the Financial Stability Report for the Second Half of 2021, and also in the Bank of Israel's Strategic Plan to Accelerate Economic Growth[4] and the Bank of Israel Annual Report for 2019. In the current box, we examine other components that influence the "residual".

One component that we do have information on for the purpose of comparison to other countries is the debt to foreign banks. According to BIS data, the level of credit obtained from foreign banks in Israel is low relative to other countries (Figure 2). There is a gap of 4 percentage points between the business debt to foreign banks as a share of GDP in Israel and the average of the developed countries. This difference cannot therefore explain a significant portion of the gap in the business debt to GDP ratio, although its effect is not negligible.

The relatively low level of the business debt to GDP ratio in Israel is partly explained by the degree of access to foreign banks (which is partly determined by geographic distance and language differences), and apparently also by differences in taxation. In the case of loans from a foreign bank, the interest payments are taxed at source in Israel, and that cost is borne by the credit recipient in the form of a higher interest rate. This higher price is a barrier to Israeli companies wishing to obtain credit abroad. An examination of the tax system in Europe[5] shows that in those countries there is an exemption from at-source taxation on interest payments (where the exemption and recognition of the financing expense are limited by ceilings). In the US as well, there is an exemption from at–source taxation on interest payments.

The critical role of at-source taxation can also be seen in a legislative memo published in July 2021 in favor of adopting an exemption from at–source taxation on loans from abroad to the high-tech sector in Israel. The argument is that the domestic loan market for high-tech companies is not sufficiently developed and at–source taxation makes it difficult for these companies to obtain credit abroad, such that they are

[1] https://stats.bis.org/statx/srs/table/c1.

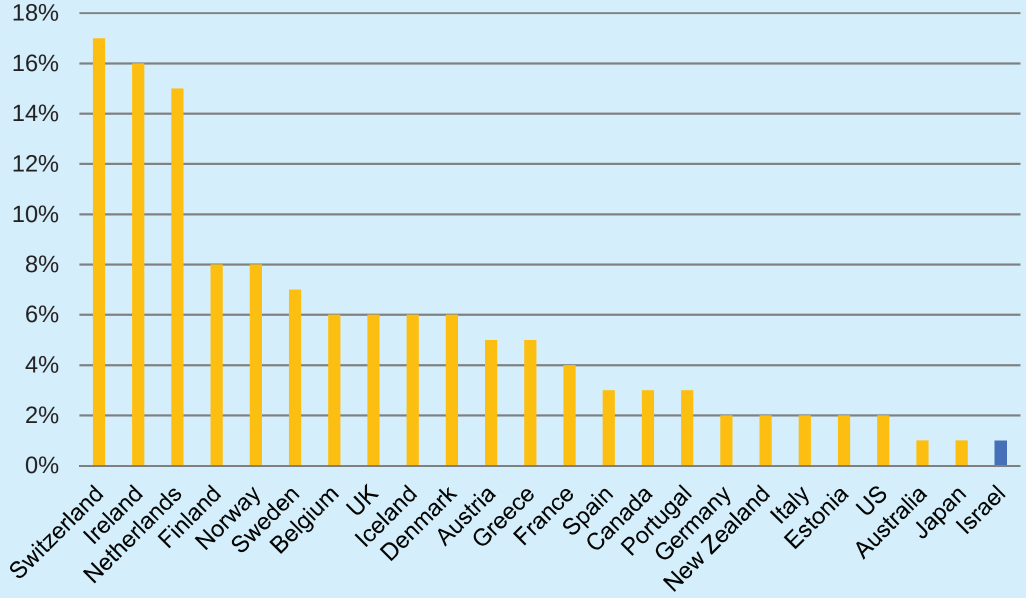
[2] The OECD definition used to calculate total business debt relative to GDP differs somewhat from the BIS definition. The OECD definition does not include credit from associated companies or from abroad and therefore facilitates an analysis of this subject. There are other differences in definitions due to the different accounting methods used and to a somewhat different definition of entities in the business sector.

[3] An examination of the level of business debt provided by domestic banks using ECB data and based on a sample of European countries (ECB statistics) found that the level of debt relative to GDP in Israel is about 7 percentage points lower than the average for those countries.

[4] https://www.boi.org.il/he/NewsAndPublications/PressReleases/Pages/16-6-21.aspx.

[5] Ruud de Mooij and Shafik Hebous. 2017. "Curbing Corporate Debt Bias: Do Limitations to Interest Deductibility Work?". IMF Working Paper No. 17/22.

Figure 2
Business Sector Debt to Foreign Banks, June 2021 (percent of GDP)



SOURCE: Based on BIS.

able to finance themselves through debt to only a negligible extent relative to other countries (Draft Decision Proposal: "Plan for encouraging innovative growth in the high-tech sector and strengthening the role of technology and science"). However, the goal of at- source taxation is to prevent tax planning by Israeli companies and the transfer of revenue abroad.

Another possible explanation for the gap in the "residual" between Israel and other countries is related to the activity of multinational companies in other countries, which leads to a high level of their business debt, particularly their debt to associated companies.[6] This is primarily due to the exemption from at-source taxation in European countries, which makes it possible for the business sector in those countries to obtain credit abroad without sacrificing any revenue. The ECB's Financial Stability Review[7] mentions that in European countries, the corporate structure includes a high level of activity in loans from the associated companies to multinational companies, and since the providers of these loans are associated companies—which have joint economic interests with the recipient company—the resulting leverage risk is relatively low. Companies in countries with a high income tax rate will tend to take on debt in order to benefit from the exemption from at-source taxation on the expense. As a result, loans from associated companies located in foreign countries are common in Europe. In many cases, those foreign countries are financial centers. It appears that the companies in these countries obtain financing

[6] Unlike in other countries and in order to avoid double counting, in Israel the debt of holding companies is counted but not that of associated companies. Other countries usually count the debt of associated companies but not that of holding companies.

[7] For example, https://www.ecb.europa.eu/pub/financial-tability/fsr/html/ecb.fsr201805.en.html. The subject is also mentioned in IMF Country Report No. 19/321.

for the loans they provide to associated companies by means of domestic financial activity, which is liable to lead to double counting of the national debt in countries that serve as financial centers. As a result, their recorded national debt level is higher than the actual level.

As of the second quarter of 2021 (BIS data), the ten countries with the highest business debt as a share of GDP were Luxembourg, Hong Kong, Sweden, Ireland, France, China, Netherlands, Belgium, Norway, and Switzerland. Business debt rates in these countries ranged from 322 percent of GDP to 146 percent of GDP (more than twice the level in Israel). These countries are characterized by a high level of multinational activity, and some of them are known as financial centers. It appears that this activity raises their official business debt to GDP ratio.[8] Although there are no data on business debt to associated companies, information can be gleaned from the volume of their activity as a share of total business activity of multinational companies. An examination shows that in Luxembourg, Norway, and Ireland about 70 percent of corporate tax revenue comes from multinational companies, while the average for all reporting countries is about half that figure.[9] In Sweden, about 50 percent of business debt as a share of GDP is accounted for by debt to associated companies[10], and 50 percent of corporate tax revenues originate from multinational companies.[11] In France, as of 2017, about 40 percent of business debt is comprised of domestic debt to associated companies[12] and about 45 percent of corporate tax revenues originate from multinationals.[13] In the Netherlands, about 60 percent of business debt is owed to multinational companies and about 80 percent of business debt is the result of loans between associated companies.[14] Also in the Netherlands, about 50 percent of corporate tax revenues come from multinational companies.[15] In Belgium, about 60 percent of business debt is comprised of loans between associated companies[16], although only 26 percent of corporate tax revenues come from multinational companies (perhaps because the tax benefits to these companies reduce the amount of tax revenue collected from them).[17]

For the sake of comparison, we examined the gap between the business debt to GDP ratio in Israel and the average for the English-speaking OECD countries (the US, Canada, Britain, Australia, and New Zealand) without any European countries and found that the ratio in these countries is affected by the level of activity of associated companies. The gap stands at about 13 percentage points, which is only half of that found between Israel and the average of all developed countries.

According to this analysis, part of the explanation for the gap in the business debt to GDP ratio between Israel and other countries is apparently related to the activity of multinational companies in Europe and the differences in taxation between them. Apart from the technical explanation (double

[8] It may be that some of the bias is due to the fact that the debt of multinational companies is higher than their contribution to domestic GDP.
[9] Corporate Tax Statistics, Third Addition – OECD Publications 2021.
[10] https://www.statistikdatabasen.scb.se/sq/112977.
[11] Corporate Tax Statistics Third Addition – OECD Publications 2021.
[12] IMF Country Report No. 19/321.
[13] Corporate Tax Statistics Third Addition – OECD Publications 2021.
[14] https://opendata.cbs.nl/statline/#/CBS/en/dataset/84099ENG/table?dl=57BFC.
[15] Corporate Tax Statistics Third Addition – OECD Publications 2021.
[16] https://stat.nbb.be/?lang=en.
[17] Corporate Tax Statistics Third Addition – OECD Publications 2021.

counting), the lack of an exemption from at–source taxation on interest payments in Israel raises the price of credit obtained from associated companies and from foreign banks, and it is therefore possible that part of the gap is due to the difficulty experienced by domestic companies in obtaining credit, relative to companies in other countries. Together with the discussion in Box 6.2 in Chapter 6, the current box provides evidence of the importance of international taxation in the analysis of economic data and their comparison across countries.

a. Business credit from the banks

Business sector debt to the banks totaled NIS 574 billion in December 2021, after growing by a record rate of about 18 percent (relative to the same period in the previous year). That growth occurred primarily during the second half of the year.

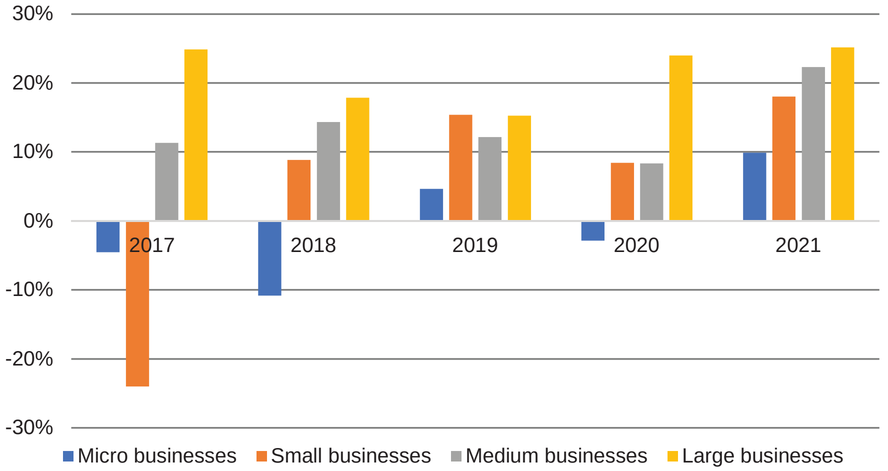
The construction and real estate industries showed particularly high growth in their total debt to the banks. The average interest rate paid by these industries remained relatively unchanged during the course of the year (the yield on government bonds rose somewhat) and their risk declined, as shown by the decline in the loan loss provision to its precrisis level. The expansion of the supply of credit was apparently the result of regulatory changes, including the loosening of the restrictions on credit provision to the construction, real estate, and infrastructure industries as part of the measures to deal with the COVID-19 pandemic adopted in December 2020[3], and which were a continuation of the lifting of restrictions on the banks' exposure to this industry starting in 2016. (For further details, see Chapter 4 of the Bank of Israel Annual Reports for 2018 and 2019.) Indications of the growth in demand include the increased activity in the construction industry and in the housing market, among other things. (For further details, see Chapter 9 in this report.)

The expansion of supply and the increase in demand led, as mentioned above, to rapid growth in credit. However, that growth was not uniform. An examination by firm size shows that although during 2021 the rate of growth in new credit provision to all types of businesses was higher than in previous years, new credit to small businesses grew by less than new credit to large businesses, which was a continuation of the trend in recent years (Figure 4.2). Furthermore, it appears that there were also weaker industries that experienced a contraction in the provision of credit. For example, the debt to the banks of the accommodation and food service industry (which was particularly hard-hit by the restrictions imposed during the pandemic) grew by a negligible rate, while the interest rate on its credit increased during the second half of the year (in contrast to other industries where the interest rate remained stable). The businesses in this industry continued to encounter difficulties in obtaining credit, even though the industry's credit risk declined during the second half of the year with the

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

recovery in activity. It appears that the reduced supply of credit was a problem only for small businesses in the industry, since large businesses, particularly hotels, managed to obtain credit from nonbank channels, as described below. The Central Bureau of Statistics Business Tendency Survey showed similar findings, noting hotels and accommodation and food services as industries that were in greater need of support from the funds than other industries. The survey also indicated that large businesses were in less need of assistance than small ones.

Figure 4.2
Increase in New Bank Credit by Business Size, 2017–2021
(annual rate of change)



SOURCE: Based on reports to the Banking Supervision Department.

b. Nonbank credit

Nonbank business credit is primarily obtained from institutional investors, households, and foreign residents. Only a small proportion is obtained from regulated credit providers or from the credit card companies, and it is used primarily to finance large businesses.

The debt mix of institutional investors returned to its trend, namely an increase in private loans at the expense of investment in bonds.

Total business debt to financial institutions (in the form of loans, tradable bonds and nontradable bonds) grew at a lower rate than in previous years (3 percent in 2021 as opposed to an average of about 6 percent during the previous five years). Furthermore, the mix of debt changed over the course of the year. There was a decline in the volume of bonds held by financial institutions, which was partly offset by an increase in direct loans. These changes in the mix of debt reflect a return to the trend in recent years, namely growth in the provision of private loans at the expense of investment in bonds.[4] In 2020, there was a deviation from the trend, due to an increase in tradable

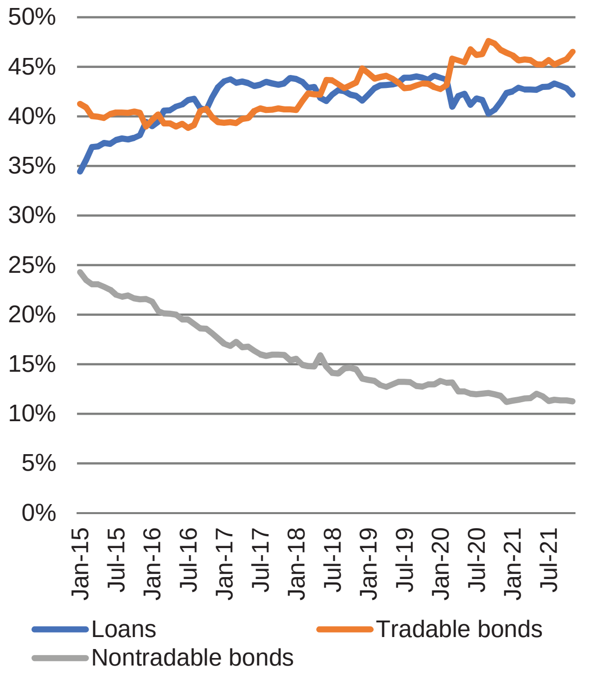
[4] See I. Kedmi and G. Lakan (2021), "Monitoring Costs of Public Debt: Evidence from a Natural Experiment in Israel", Bank of Israel Research Department Working Paper No. 2021.18.

bonds combined with a decline in their prices during the pandemic and the measures taken by the Bank of Israel to support the bond market (Figure 3). In 2021, there was a renewal of the long-term trend.

The debt of the construction industry and the real estate industry, which is involved in the leasing of real estate among other things, grew at a high rate. The banks were the main source of financing for the construction industry while nonbank financing was the primary vehicle for the real estate industry.

The increase in demand for credit in the construction and real estate industries as their level of activity increased was also evident in nonbank channels. An examination by industry shows that in this channel as well, credit to the construction industry and the real estate industry grew rapidly. (For further details, see Box 2 in the Financial Stability Report for the Second Half of 2021.) The spreads on the bonds of the real estate and trade industries remained stable, as in the case of debt to the banks. The hotel industry and the accommodation and food services industry also raised capital by issuing bonds, which is consistent with the hypothesis that small businesses in these industries, which do not enjoy access to the capital market, found it difficult to obtain credit, while large businesses had other options.

Figure 4.3
Distribution of Business Sector Debt to Institutional Investors, by Investment Instrument, 2015–2021



SOURCE: Institutional investors' reports to the Bank of Israel.

c. The equity market

The increase in financial asset prices was reflected in a growing wave of initial public offerings: 93 new companies—most of them in high-tech—issued shares this year.

The increase in financial asset prices was reflected in a wave of initial public offerings, which began in 2020 and gained momentum in 2021. Ninety-three new companies issued shares on the Tel Aviv Stock Exchange in 2021 (the highest number since 1993). They raised about NIS 10.5 billion and the total of all capital raised (new issues and those of already listed companies) reached a record total of about NIS 26 billion. The rapid growth in demand for high-tech goods and services and the low interest rate supported the raising of capital by the high-tech sector, which accounts for about 65 percent of the new companies that raised capital on the TASE during the year. (For further details on the connection between this activity and the high-tech sector, see Chapter 1 of this Report.) This is in fact a new development since in previous years high-tech companies did not often issue shares on the TASE, and their capital raising on the TASE is still low relative to that of Israeli companies on the US stock exchanges (Figure 4.4).

A significant portion of the financing of the high-tech sector is obtained by way of venture capital funds. In 2021, there was an acceleration in the long-term trend of growth in the raising of venture capital by the Israeli high-tech sector. In contrast to the previous year, in which total issues rose alongside a decline in Seed and Round A fundraising, in 2021 there was an increase in all these financing stages, including Seed (Figure 5). The financing from venture capital funds is also largely from abroad (about 73 percent in 2021), so that the supply of capital is primarily dependent on the financial conditions prevailing there.

BOX 4.2: HOUSEHOLD INVESTMENTS IN SECURITIES

- As of the end of 2021, there were about 908,000 trading accounts belonging to individuals who are Israeli residents, representing about one-third of the households in Israel.
- Households in Israel increased their participation in the capital market during the COVID-19 crisis, as was the case in other countries.
- Households' securities holdings are almost equally divided between mutual funds—primarily domestic ones—and direct holdings of securities. The direct holdings are concentrated in equities, both Israeli and foreign, in contrast to investments by institutional investors and mutual funds on behalf of households, which are concentrated in more conservative assets.
- Households' direct holdings of corporate bonds and equities are of similar size to the proportion of these risk assets held by households indirectly by means of mutual funds. Thus, in examining the risk of large-scale selloffs in the event of a crisis, it is important to consider households' securities holdings, both directly and indirectly by way of mutual funds.

Background and a survey of the literature

Households in Israel increased their participation in the capital market during the COVID-19 crisis, starting from April 2020, as was the case in other countries. This is expected to increase their ability to preserve and grow their wealth, while maintaining a reasonable level of risk. However, it is also liable to increase the selloff of risk assets during a crisis, and thus to exacerbate the crisis in the financial markets. In view of the considerable weight of households in the capital market and the growth in their securities holdings during the past two years, it is important to understand their behavior as investors in the capital market. This box provides the first survey of households' direct holdings (in contrast to their indirect holdings by way of mutual funds, pension funds, and the like) of securities traded on the Tel Aviv Stock Exchange (TASE).[1]

Households that wish to save from their current income for future needs generally do so by investing in deposits, real estate (particularly housing), and securities traded on the stock exchange, whether directly or by means of managed savings products. Investment in the stock market, and particularly in equities, makes it possible for households to preserve their capital and even to grow it substantially, in view of the fact that equity markets worldwide tend to provide significantly higher returns, at least in the long run, than investments in assets such as government bonds and deposits. (This phenomenon is commonly referred to in the literature as the equity premium.) However, the data for many countries show that most households do not invest directly in equities (Mankiw and Zeldes, 1991; Haliassos and Bertaut 1995; Bucher-Koenen et al., 2021).

Households can invest in the stock market either directly or indirectly by means of financial institutions that manage their investments. Indirect investment is carried out primarily by means of institutions that manage long-term savings (pension funds, insurance plans, provident funds, and advanced study funds), and by means of mutual funds. Households are less likely to redeem or to shift their savings among the former institutions in view of the longer term of their investments and the tax benefits they provide, which are conditional on the period of the investment. (For further details, see Box 4.1 “Withdrawals from the various savings products during the crisis” in the Bank of Israel Annual Report for 2020.) In contrast, households are more likely to make changes in their mutual fund holdings, which can have an effect on equity prices (Ben-Rephael, Kandel, and Wohl, 2012). Households that invest directly in the stock market are also expected to trade more frequently and thus contribute to the liquidity of the stock exchange (Ozik et al., 2021). However, some researchers argue that households that invest in the capital market make systematic errors (Barber and Odean, 2000) and their herd behavior is liable to inflate the prices of certain equities (Barber et al., 2021). Against these arguments, other researchers attribute a certain amount of forecasting ability to them (Boehmer et al., 2021).

A new study shows that the equity market is less flexible than economists think, such that new money that enters the market leads to a surge in equity prices while outgoing money causes them to drop (Gabaix and Koijen, 2021). Understanding households’ behavior in the capital market, both as direct investors and as investors by way of the mutual funds, is therefore highly important, since they tend to invest and withdraw money from the equity market more frequently than intermediate- and long-term savings institutions. This is because they are not subject to the various restrictions imposed on institutional investors who manage the public’s long-term savings, and because they are more influenced by changes in preferences or sentiment (Kumar and Lee, 2006). In Israel, rapid accumulation in the mutual funds that specialize in corporate bonds has been found to contribute to the deviation of bond spreads relative to fundamental factors (Graham-Rosen, Vieder, and Michelson, 2021).

[1] This box is largely based on data on the holdings of securities by individuals who are residents of Israel. This includes small households, but also richer households, including stakeholders in companies whose holdings in a company are directly registered in their name, rather than by way of another company.

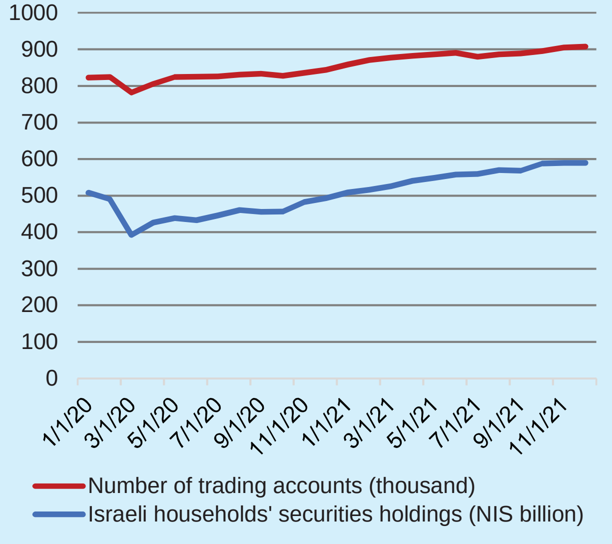
The worldwide health and economic crisis during the COVID-19 pandemic led to a surprising financial and social phenomenon—a surge in the households' activity in securities (Pagano et al., 2021). Evidence of the expansion in trading and the opening of new accounts was observed even at the peak of the crisis (Ortmann et al., 2020). The combination of an increase in savings, more free time as a result of the pandemic, and the increasing number of trading platforms (especially Robinhood) led to a substantial increase in households' participation in trading on the US stock exchanges, which supported liquidity in the US market during the crisis (Ozik et al., 2021).

Securities holdings by Israeli households

As of December 2021, there were about 908,000 trading accounts held by Israeli residents. Based on the simplifying assumption that each household holds only one account for securities trading[2], about one-third of households in Israel maintain such an account.[3] These households directly hold about 27 percent of the total value of securities traded on the Tel Aviv Stock Exchange.[4]

The data indicate that the number of households in Israel that are active on the stock exchange has risen, which is in line with findings for other countries as described above. Following a decline at the beginning of the crisis, the number of trading accounts belonging to households increased by 16 percent from the end of March 2020 until December 2021. This increase, along with the growth in the value of securities in both Israel and abroad, raised the value of households' securities holdings by 50 percent relative to the peak of the crisis in March 2020 (Figure 1). An examination of the total buying and selling in the accounts that existed for the entire period from January 2020 to December 2021 (inclusive) shows considerable heterogeneity in the scope of activity among households that hold securities. About 16 percent of the households examined did not make even one change in their portfolio during the past two years, while in contrast, about 8 percent of households bought and sold

Figure 1
Number of Israeli Households' Trading Accounts and Value of their Securities Holdings, January 2020–December 2021
(monthly data)



SOURCE: Based on Tel Aviv Stock Exchange and reports to the Capital Market Authority and to the Bank of Israel.

2 If the same household has trading accounts with various stock exchange members, they will not be consolidated and will be identified as separate accounts.

3 According to Central Bureau of Statistics estimates, as of 2020 there were 2,710,000 households in Israel.

4 In order to calculate the value of securities on the TASE, the following types of securities were taken into account: government bonds, *makam*, corporate bonds, and equities, which are traded on the TASE.

securities in amounts that were five-fold the value of their securities holdings at the beginning of the examined period.

The increase in the opening of trading accounts was concentrated in the investment houses, which showed an 86 percent increase in their number of trading accounts between March 2020 and December 2021, to a total of 83,000. Accordingly, trading accounts with the investment houses accounted for 9 percent of total trading accounts in December 2021, in contrast to only 6 percent in March 2020. About 38 percent of the households that hold securities at their bank do not hold specific securities, but rather only mutual funds and ETFs. In contrast only 20 percent of households that hold securities by way of the investment houses hold no specific securities.

Breakdown of securities holdings among Israeli households

As of the end of 2021, the value of the securities holdings among households in Israel was divided almost equally between mutual funds and direct holdings (Figure 2a). Most of the former are in domestic mutual funds, with only a minority in foreign funds (Figure 2b). Households' direct holdings are concentrated in equities, both Israeli and foreign, but they have also invested in Israeli corporate bonds, and to a lesser extent Israeli government bonds and foreign corporate bonds (Figure 2c). The massive investment by households in equities is prominent relative to the mutual funds (Figure 3a), and particularly so relative to institutional investors (Figure 3b), whose portfolio managed for households is invested in much less risky assets.[5]

Households' tendency to invest in riskier assets directly rather than by means of institutional investors is somewhat surprising for two reasons:

a) There is an advantage in investing intermediate- to long-term savings (which are the main assets managed by the institutional investors) in risk assets since in the long term, they suffer less from short-term volatility.

b) The institutional investors enjoy a tax advantage, which is more important in the case of risk assets since their expected average return over time is higher than that of more conservative assets.

The differences in the composition of investments between households' direct holdings and their holdings by means of institutional investors and mutual funds may be the result of differences in characteristics between the savers in the various channels, or the desire of households that directly purchase securities to choose specific securities, particularly specific equities, based on the expectation of higher returns.[6]

[5] Excluding the old pension funds, whose members are closer to retirement and which hold a particularly conservative portfolio, the rate of equities and other risk assets in the institutional investors' portfolio is generally higher, but is still much lower than the rate held directly by households.

[6] As mentioned in Footnote 1, some of households' equity holdings on the TASE are actually direct holdings by stakeholders in companies. Nevertheless, the holdings of stakeholders cannot explain the high proportion of foreign share holdings among households, and as Figure 8 below shows, they also do not account for the vast majority of household holdings in Israeli shares.

Figure 2a
Distribution of Households' Holdings between Mutual Funds and Direct Holdings, December 2021

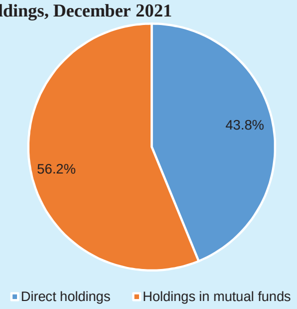


Figure 2b
Distribution of Households' Direct Holdings of Securities, December 2021

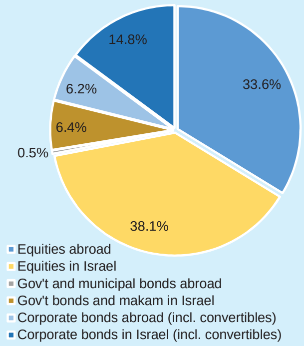
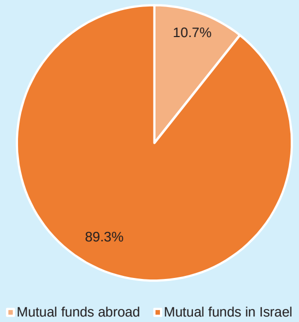
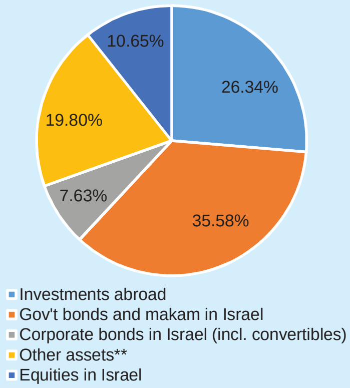


Figure 2c
Distribution of Households' Holdings of Mutual Funds, December 2021



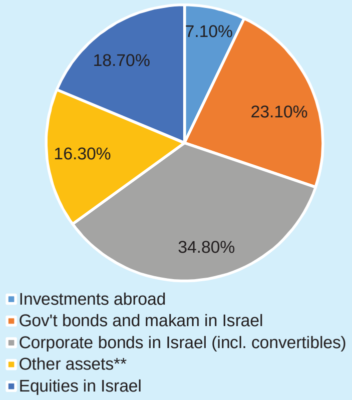
SOURCE: Based on Tel Aviv Stock Exchange and reports to the Capital Market Authority and to the Bank of Israel.

Figure 3a
Distribution of Institutional Investors'* Holdings, December 2021



* Pension funds, advanced training funds, provident funds, and insurance companies.
** Including cash, deposits, and ETFs.

Figure 3b
Distribution of Mutual Funds' Holdings, December 2021



SOURCE: Based on Tel Aviv Stock Exchange and reports to the Capital Market Authority and to the Bank of Israel.

The risk implicit in the households' securities holdings

Alongside the advantages of participation in the stock market for households and for the economy as a whole, significant holdings of risky financial assets—equities and corporate bonds—by households expose them to losses in the value of their savings during market declines. Moreover, if households react to declines in the markets by selling financial assets, they are liable to exacerbate the downward trend in prices. In recent years, there has been a growing literature on the adverse effect of asset selling by mutual funds as a result of redemptions by households (for example, Goldstein et al., 2017; Falato et al., 2021). The COVID-19 crisis demonstrated the risk of large redemptions from the mutual funds and their potential effect on the financial markets both in Israel and elsewhere. (For further details, see the box "Developments in the corporate bond market during the crisis" in the Financial Stability Report for the First Half of 2020, and the chapter on asset prices in the Financial Stability Report for the Second Half of 2021.)

However, as demonstrated by the data presented above, households invest in risk assets not only by means of the mutual funds, but also directly. Direct holdings of equities and corporate bonds by households in Israel increase the concern that in a crisis, redemptions by households from the mutual funds and their direct sale of risk assets will lead to significant supply pressure in the equity market and/or the corporate bond market. Accordingly, in March 2020, when the markets fell sharply due to fears of the pandemic's economic consequences, households sold 15 percent of their holdings in mutual funds and 5 percent of their direct holdings in securities. From a broader perspective, during the years 2020–2021, there was a correlation of 85 percent in the quantity factor (which is the monthly change in holdings that is not the result of changes in security prices or changes in exchange rates) between the change in households' investment in mutual funds and the change in their direct holdings of securities.

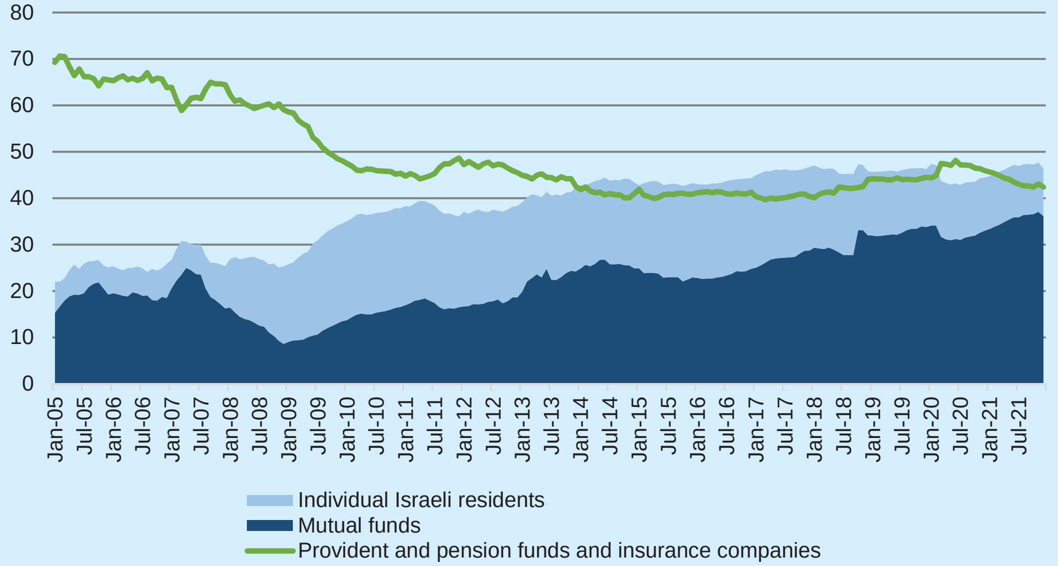
A recent study looked at the effect of selling on equity prices, and found that each dollar that leaves the equity market brings about a drop of about 5 dollars in the aggregate value of the market, and that the decline is a prolonged one since there are not enough arbitragers to ensure a quick readjustment of prices by means of selling and buying (Gabaix and Koijen, 2021). Figures 4 and 5 show that the direct holdings of corporate bonds and equities, respectively, are similar in magnitude to the proportion of these risk assets in the holdings of households by means of mutual funds.[7] As a result, households in Israel hold—directly and indirectly—about 46 percent of the corporate bonds and about 15 percent of the equities traded on the TASE. Thus, the risk of a large-scale selloff in the event of a crisis is greater than what is indicated only by the holdings of risk assets by mutual funds.

7 Apart from the holdings appearing in the graphs, there are also holdings by foreigners and by companies. The differentiation between households, individuals that are stakeholders in the examined companies, and companies is based on data for the years 2020–21. In the rest of the box, we have used the term "households" to refer to all individuals who are residents of Israel, including stakeholders in companies.

Conclusion

Households in Israel increased their participation in the capital market during the COVID-19 crisis, as was the case in other countries. This is expected to contribute to their ability to preserve and grow their wealth while maintaining a reasonable level of risk. However, this is liable to contribute to selling in crisis situations, and thus to exacerbate the pressure on the prices of risk assets and the losses to all investors. The significant scale of direct holdings of risk assets by households alongside their holdings of these assets by means of mutual funds calls for further analysis, with the goal of understanding the risk of "fire sales" during a crisis.

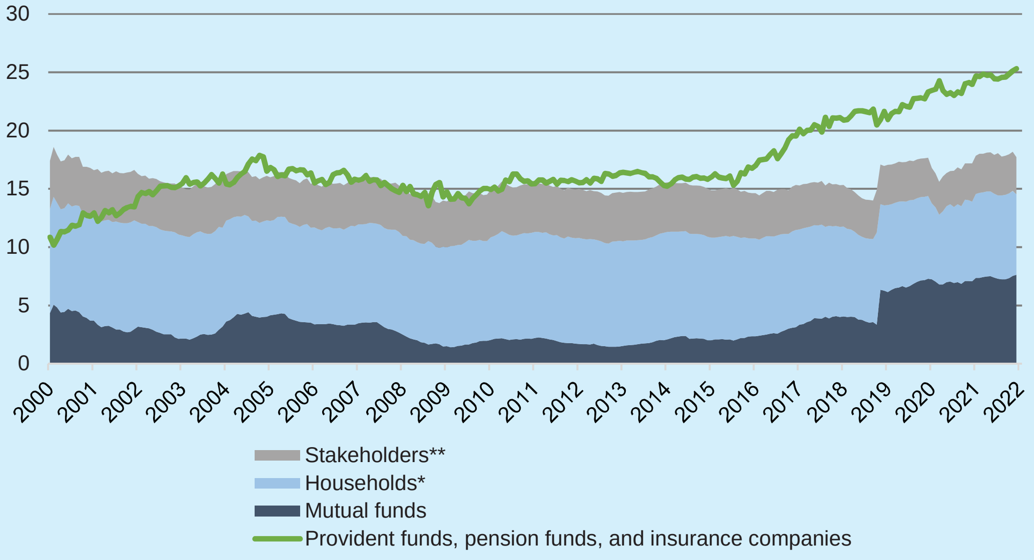
Figure 4
Corporate Bond Holdings by Holder, January 2005–December 2021 (monthly data, percent)



* The data regarding individuals' holdings are for January–October 2021. We calculated the average relative portion of this figure from the public's holdings for this period, and used it to calculate an estimate of the data for 2000–2021.

SOURCE: Based on Tel Aviv Stock Exchange and reports to the Capital Market Authority and to the Bank of Israel.

Figure 5
Holdings of Equities Traded in Tel Aviv by Holder, January 2005–December 2021
(monthly data, percent)



* The data regarding individuals' holdings are for January–October 2021. We calculated the average relative portion of this figure from the public's holdings for this period, and used it to calculate an estimate of the data for 2000–2021. The figure for households includes Israeli resident individuals who hold no more than 5 percent of each security. This data exists for January–July 2021, so we estimated it for the rest of the period using the average for that period.
** The figure for stakeholders includes Israeli resident individuals who hold more than 5 percent of each security, and is calculated the same way as households.
SOURCE: Based on Tel Aviv Stock Exchange and reports to the Capital Market Authority and to the Bank of Israel.

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3. HOUSEHOLD DEBT

Household debt grew at a higher rate than in previous years. This was due to a sharp rise in both housing debt (14.5 percent) and nonhousing debt (10 percent), relative to the same period in the previous year.

a. Housing debt

Housing debt grew rapidly in 2021. This was due to the increase in debt to the banks, which constitutes the main channel of housing debt for households. Total new mortgage borrowing increased in most of the tracks, particularly the unindexed variable and fixed interest tracks (Figure 4.4) while interest rates in these tracks remained unchanged (Figure 4.5). This was accompanied by a small increase in the yield on 10-year government bonds. The stability of interest rates on mortgages (despite the increase in risk) alongside the increase in yields on government bonds and the growth in total new mortgage borrowing are indications of an expansion of the credit supply. In parallel, there was growth in demand, due in part to the increase in the weight of investors in the housing market as a result of a reduction in the purchase tax. (For further details on the factors that affect the demand for housing, see Chapter 9 in this Report.)

Figure 4.2: Outstanding household debt

current prices, end of period, NIS billion

	Balance							Rate of change	
	2017	2018	2019	2020	6-2021	9-2021	12-2021	From the start of the year	Last quarter
Total household debt[a]	**529**	**557**	**588**	**611**	**643**	**664**	**691**	**13.1%**	**4.0%**
by debtor:									
to Banks	**474**	**496**	**520**	**544**	**572**	**591**	**613**	**12.7%**	**3.8%**
of which: Housing	317	339	364	397	423	441	459	**15.5%**	**4.2%**
Nonhousing	157	157	155	146	149	150	154	**5.3%**	**2.8%**
Current accounts	13	12	12	9	9	10	9	**9.3%**	**-3.7%**
to Institutional investors	**23.8**	**28.6**	**32.8**	**33.0**	**35.4**	**38.0**	**42.1**	**27.5%**	**10.7%**
of which: Housing	11.7	13.5	14.0	12.9	12.2	12.0	12.2	**-5.5%**	**1.7%**
Nonhousing	12.1	15.1	18.8	20.1	23.2	26.0	29.9	**48.6%**	**14.8%**
To credit card companies	**18.6**	**20.6**	**23.7**	**23.4**	**24.3**	**25.2**	**25.2**	**7.8%**	**0.0%**
To the government (earmarked credit)	**12.9**	**11.8**	**11.4**	**10.7**	**10.7**	**10.7**	**10.7**	**-0.8%**	**-0.2%**
of which: Housing	8.7	7.9	7.3	6.7	6.5	6.4	6.2	**-7.5%**	**-2.4%**
by uses:									
Total housing debt	337	360	386	417	442	459	477	**14.5%**	**4.0%**
Total nonhousing debt	192	197	202	194	201	206	214	**10.2%**	**3.9%**

[a] Excluding credit from nonresidents, due to a lack of data.

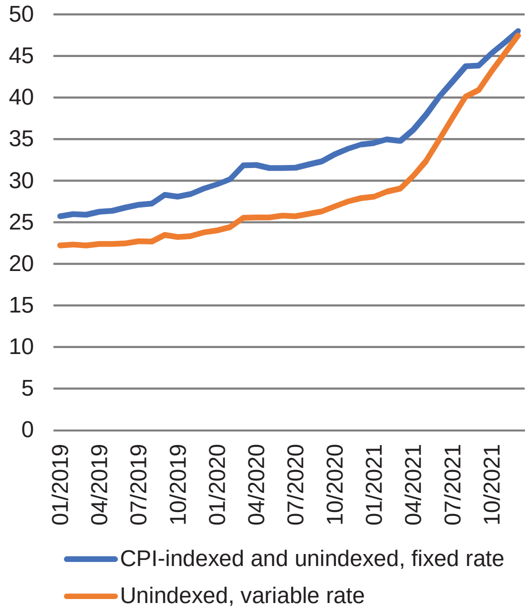
[b] Including nonresidential loans secured by a dwelling.

[c] Credit under the credit card companies' responsibility (credit backed by the banks or under their responsibility is included in the data on debt to banks).

[d] Loans from the government to borrowers generally pass through the banking system, which serves as a conduit for the transfer of payments. The main part is loans from the government, but the items also include loans from employers (which are not part of the government or local authorities) to employees, which we cannot separate out.

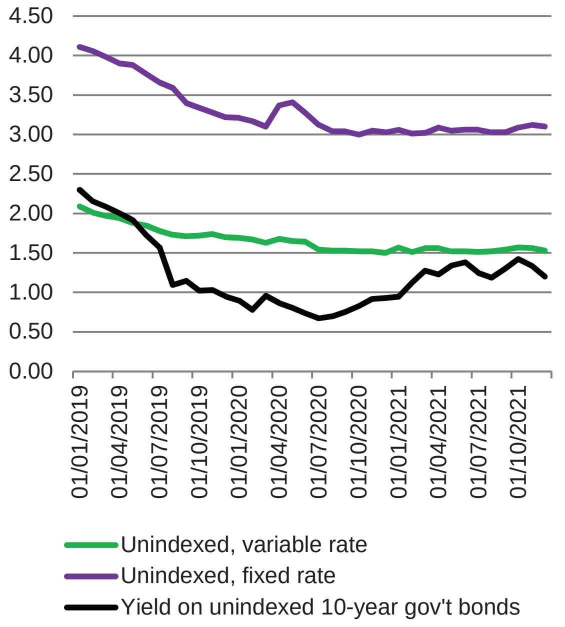
[e] The mortgage-backed loans items. Until August 2013, the figure did not distinguish between mortgage-backed loans to households and to the business sector. In August 2013, the distinction began, and the data were revised retroactively, which moved some of the balance to debt to the business sector.

Figure 4.4
Total Mortgages Issued in the Past 12 Months, by Indexation and Interest Type, 2019–2021 (NIS billion)



SOURCE: Based on banks' reports to the Banking Supervision Department.

Figure 4.5
Interest on New Mortgages by Indexation and Interest Type, and Yield on 10-Year Government Bonds 2019–2021 (percent)



SOURCE: Based on banks' reports to the Banking Supervision Department.

BOX 4.3: CHANGES IN THE CHARACTERISTICS OF MORTGAGES AND IN BUYING PATTERNS IN THE HOUSING MARKET AS A RESULT OF THE COVID-19 CRISIS

- No evidence was found that low income earners left the housing and mortgage markets as a result of the COVID-19 crisis.
- Despite the greater uncertainty with respect to the crisis, there was an increase in the leverage of mortgages, particularly with respect to the share of mortgages at the maximum leverage level permitted by the Banking Supervision Department directives.
- The increase in mortgage financing was across the board and is apparently due to the fact that housing prices increased more rapidly than the accumulation of equity among buyers.
- During the period following the onset of the crisis, there was a greater tendency among housing upgraders to purchase more expensive properties than in the preceding period.
- An examination of the purchases in the housing market according to the type and size of the city does not reveal a change in the tastes of home buyers as a result of the crisis. This is perhaps because buyers viewed the pandemic as a transitory event.

The outbreak of the COVID-19 virus in China in late 2019 led to a global pandemic and economic crisis that lasted for over two years. The response to the health crisis included prolonged lockdowns and a shutdown of many businesses and even entire industries. Its effect on the global economy included an increase in unemployment and a high level of uncertainty, among other things. The rapid vaccination campaign, which began in December 2020 in Israel and at the beginning of 2021 in most other developed countries, led to an impressive economic recovery and the return of workers to their jobs. The rapid recovery also had an impact on the housing and mortgage markets in the developed economies[1], including Israel.[2] Studies conducted abroad show an increase in the demand for more spacious homes due to the social distancing restrictions and the possibility of working from home. This increase in demand was supported by convenient financing terms in a low-interest-rate environment; growth in disposable household income due to a drop in expenditure on services that couldn't be consumed during the lockdowns; and changes in the consumption patterns of services such as culture, entertainment, and eating out, which are usually provided in city centers.

In this box, we examine the changes that occurred in the characteristics of mortgagees and the properties they were used to purchase following the outbreak of the COVID-19 crisis in Israel, in view of the growth in home purchases and higher home prices.[3] The analysis is based on individual-level data for mortgages provided to households by the banking system during the period from October 2020 until June 2021 ("the period following the outbreak of the crisis") relative to the period from October 2019 to February 2020

[1] For further details and discussion of the events abroad, see Box 1.1 of the IMF's World Economic Outlook, October 2021; the first chapter of the IMF's Global Financial Stability Report, October 2021; and the following publication of the ECB: https://www.ecb.europa.eu/pub/economic-bulletin/articles/2021/html/ecb.ebart202107_03~36493e7b67.en.html.

[2] For a description of developments in Israel, see Chapter 4 and Chapter 9 of this Report.

[3] According to historical data, about 85 percent of home purchases are financed by a mortgage.

("the period prior to the crisis").[4] We examine only the mortgages provided to first-time home buyers and housing upgraders for two reasons: First, we wish to examine changes in the tastes of those purchasing homes for the purpose of residence (rather than investment), and second, the rate of the purchase tax on home investors changed between these two periods, which also influenced their behavior.[5] Table 1 presents the number of mortgage closures according to type of purchaser, which indicates that the number of transactions grew substantially during the period following the outbreak of the crisis.

Table 1: Mortgage Transactions by Type of Buyer and by Period

	Before the crisis	During the crisis	Rate of change
Duration	5 months	9 months	
First-time home buyers - total	23,491	47,990	
First-time home buyers - monthly average	4,698	5,332	13.5%
Housing upgraders - total	5,783	13,042	
Housing upgraders - monthly average	1,157	1,449	25.2%

SOURCE: Based on banks' reports to the Banking Supervision Department.

a. Changes in the characteristics of mortgages and mortgage borrowers

First, we examined the distribution of disposable income among households that obtained a mortgage, as defined by the mortgage banks, namely monthly net income minus fixed payments (loan payments, alimony, etc.). A comparison of the distributions shows that relatively low income earners did not exit the home and mortgage markets. The lowest income earners, who were the most affected by the crisis, weren't in these markets to begin with.[6] The distribution of disposable income among first-time home buyers during the period following the onset of the crisis is almost identical to the precrisis period, while the distribution among housing upgraders shifted rightward. Thus, housing upgraders who obtained a mortgage after the onset of the crisis had higher incomes, on average (Figure 1).[7]

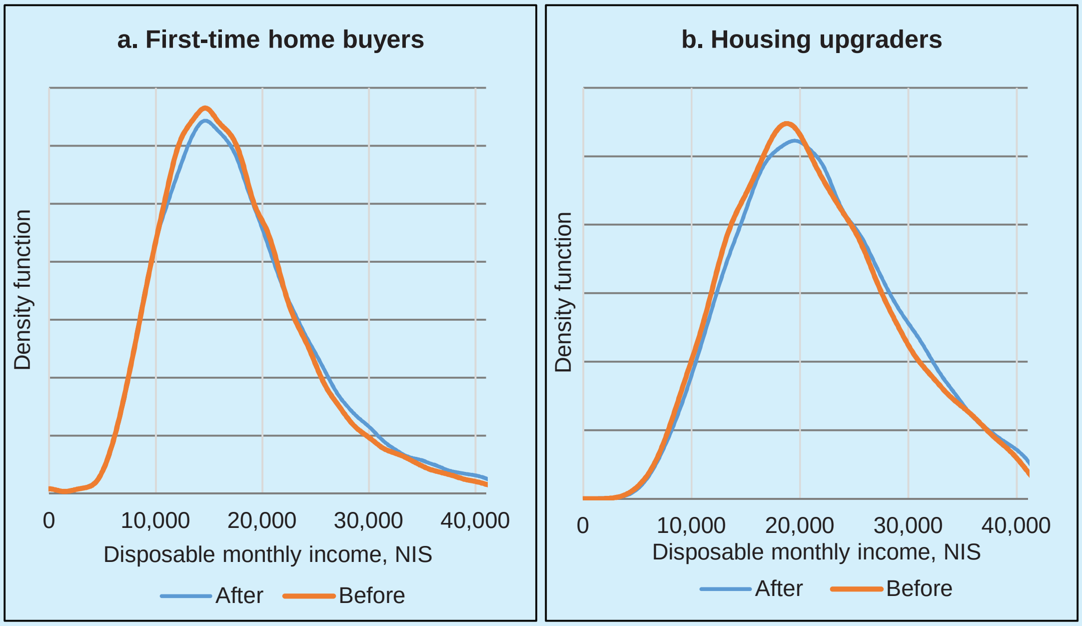
[4] Although the periods are of different length, the analysis is primarily concerned with distributions and indices, which are not seasonal. The differences should not affect the results.

[5] In addition, during the period following the onset of the crisis, the gap between investors' share of total housing transactions and their weight in the housing credit market widened relative to the precrisis period. This was reflected in an increase in purchases carried out without bank credit. For further details, see Figure 20 in the Survey of Israel's Banking System for the first half of 2021: https://www.boi.org.il/he/NewsAndPublications/RegularPublications/Pages/SkiraHalf2021.aspx [in Hebrew].

[6] A special analysis of the crisis's impact on employment carried out by the Bank of Israel Research Department found that the effect was greater among low-income households, and within that group, among single-parent families. Furthermore, it was found that the proportion of households with a low income (first to fourth deciles) that have at least one labor market participant and who spend money on rent is almost double that of high-income earners (eighth to tenth deciles) – 41 percent vs. 23 percent. For further details, see: https://www.boi.org.il/he/NewsAndPublications/RegularPublications/Pages/SkiraHalf2021.aspx [in Hebrew].

[7] We truncated the top 5 percent of the distribution of disposable income.

Figure 1
Distribution of Disposable Monthly Household Income Before and After the Start of the Crisis, by Buyer Type

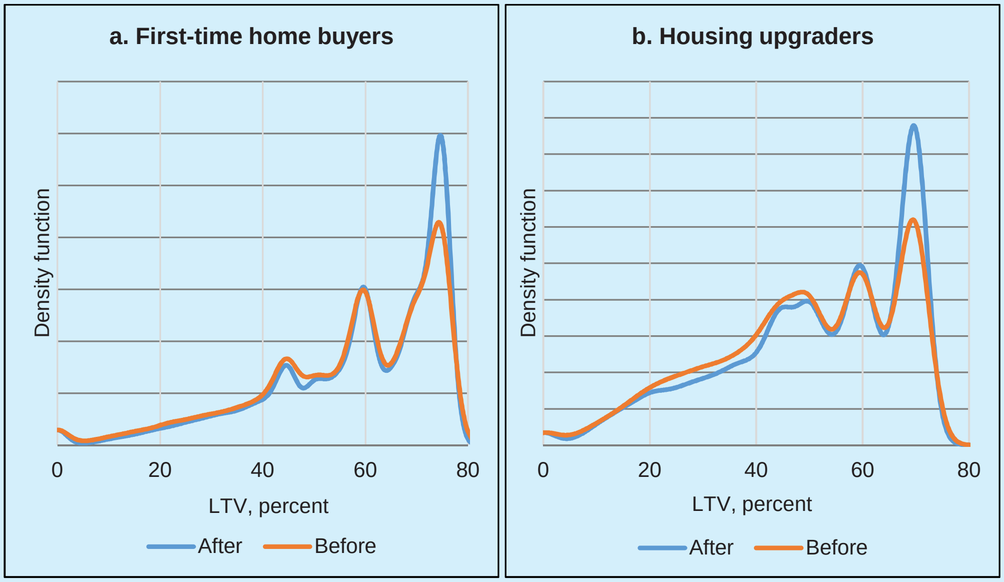


SOURCE: Based on banks' reports to the Banking Supervision Department.

An examination of mortgage characteristics reveals an increase in the degree of leverage (a larger percentage of mortgages with a high loan-to-value ratio), which is reflected primarily in the accumulation of a greater percentage of observations around the maximum values permitted by the Banking Supervision Department, namely 75 percent for first-time home buyers and 70 percent for housing upgraders, during the period following the onset of the crisis (Figure 2). Furthermore, there was a clear increase in mortgage size in both groups of buyers (Figure 3), and accordingly also in the monthly debt payment to income ratio (Figure 4). The characteristics of the distributions are presented in Table 2.[8]

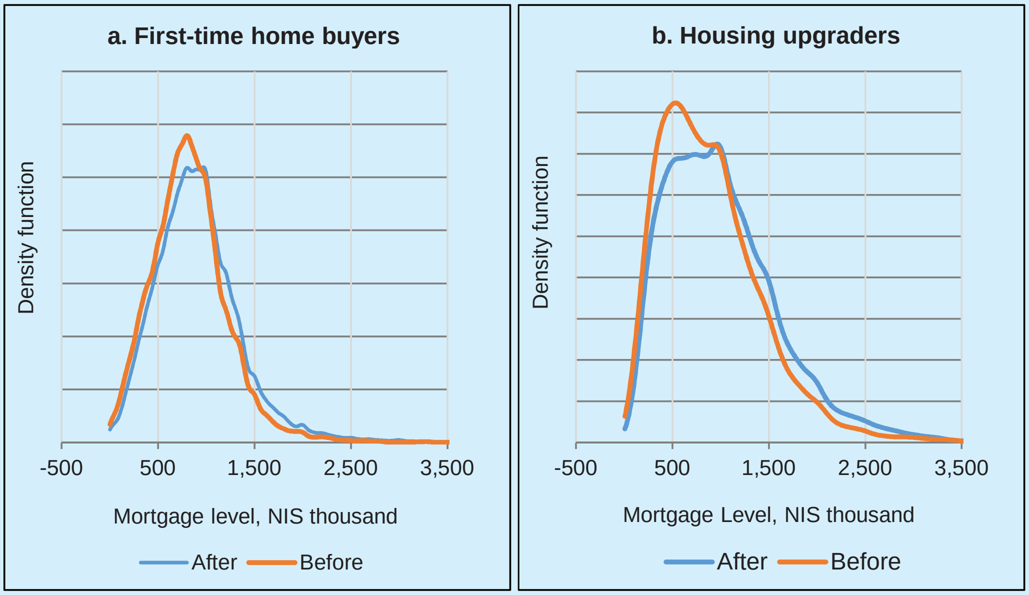
[8] A Kolmogorov-Smirnov test was carried out for all of the distributions discussed in this box. It showed that the differences between the distributions before and after the onset of the pandemic are statistically significant at a level of 1 percent for both types of buyers.

Figure 2
Distribution of Mortgage LTV Rates Before and After the Start of the Crisis, by Buyer Type



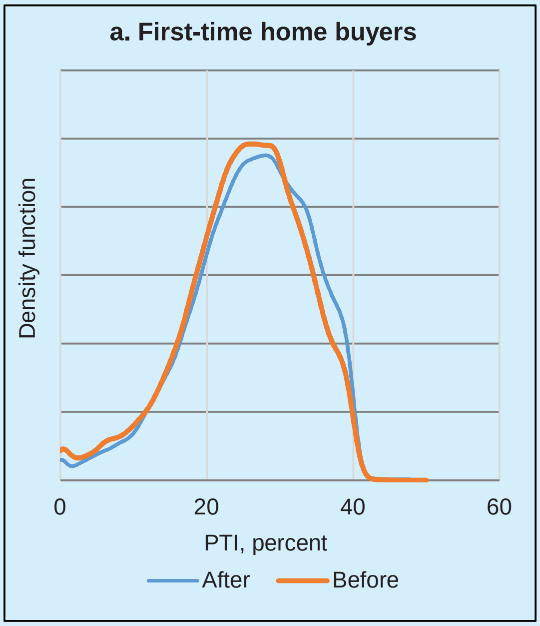
SOURCE: Based on banks' reports to the Banking Supervision Department.

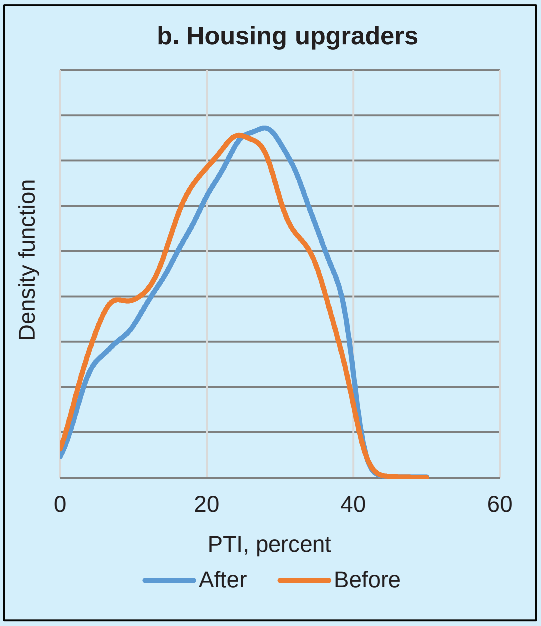
Figure 3
Distribution of Mortgage Levels Before and After the Start of the Crisis, by Buyer Type



SOURCE: Based on banks' reports to the Banking Supervision Department.

Figure 4
Distribution of Monthly PTI Before and After the Start of the Crisis, by Buyer Type





SOURCE: Based on banks' reports to the Banking Supervision Department.

Table 2: Distribution characteristics of mortgages

a. First-time home buyers

Variable	Average		25th percentile		Median		75th percentile	
	Before	After	Before	After	Before	After	Before	After
LTV (percent)	56.1	58.1	45.0	48.0	60.0	60.0	70.6	73.5
Disposable income (NIS thousand)	18.4	19.2	12.6	12.8	16.6	16.9	21.4	22.3
PTI (percent)	25.0	26.0	20.0	21.0	26.0	26.7	31.0	32.0
Property price (NIS thousand)	1,582	1,659	1,110	1,165	1,450	1,500	1,830	1,965
Mortgage amount (NIS thousand)	833	918	570	615	800	878	1,050	1,148

b. Housing upgraders

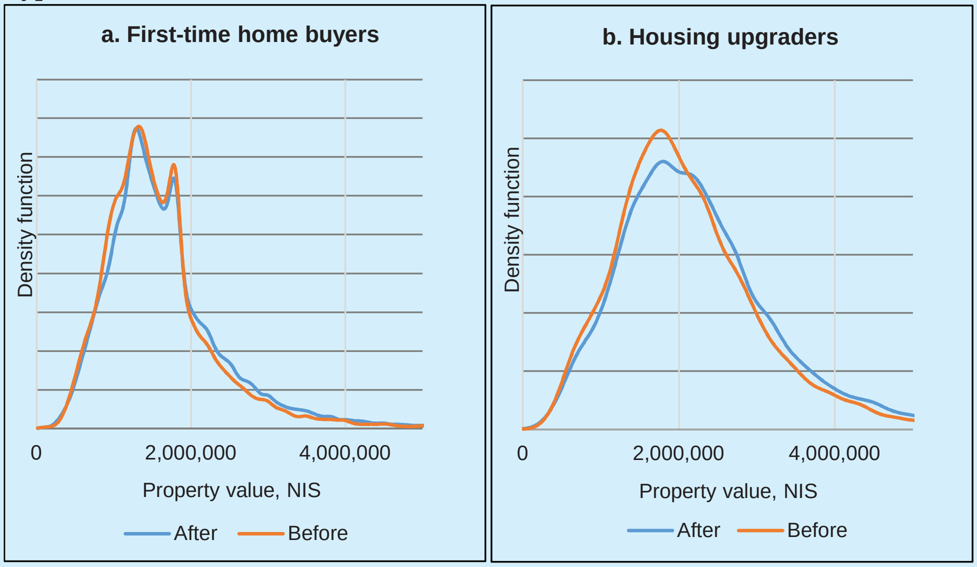
Variable	Average		25th percentile		Median		75th percentile	
	Before	After	Before	After	Before	After	Before	After
LTV (percent)	48.4	50.5	36.6	39.2	50.0	53.3	62.0	67.7
Disposable income (NIS thousand)	23.3	24.1	16.1	16.5	21.0	21.7	27.5	28.3
PTI (percent)	21.8	23.3	15.0	16.4	22.5	24.3	29.0	31.0
Property price (NIS thousand)	2,105	2,213	1,472	1,540	1,980	2,100	2,600	2,740
Mortgage amount (NIS thousand)	898	1,016	500	573	800	935	1,200	1,337

SOURCE: Based on banks' reports to the Banking Supervision Department.

b. Changes in purchasing patterns in the housing market

The changes in mortgage characteristics without a decline in borrowers' earning power (i.e. in their disposable income) may indicate that borrowers have increased the size of their mortgages in order to purchase larger and more expensive homes. Figure 5 shows a rightward shift in the price distribution of homes that were purchased with a mortgage, primarily among housing upgraders. According to Central Bureau of Statistics data, housing prices increased by an average of 5.5 percent in housing prices between the two periods of the analysis. Data from the banks' periodic reports to the Banking Supervision Department indicate that while the total volume of mortgages in the second period was 2.5 times higher than in the first, the rate of increase in mortgage volumes for the purchase of more expensive homes was much larger. The total volume of mortgages for the purchase of homes with a value of more than NIS 5 million or between NIS 3 and 5 million was 3.1 times higher, and the total mortgage volume for the purchase of homes valued at between NIS 2 and 3 million was 2.7 times higher. The proportion of mortgages provided for the purchase of homes with a value of between NIS 2 and 3 million grew from 23.2 percent of total mortgage volume during the first period to 25.2 percent during the second, while the proportion of mortgages provided to buy homes with a value exceeding NIS 3 million grew from 16 percent of total mortgage volume during the first period to 19.7 percent during the second. According to this data, it can be assumed that this was due not only to an increase in the prices of these homes but also a trend toward purchasing more expensive homes, including large apartments, garden apartments,

Figure 5
Distribution of Property Value Before and After the Start of the Crisis, by Buyer Type



SOURCE: Based on banks' reports to the Banking Supervision Department.

penthouses, single-unit dwellings, and so forth.[9] This assumption cannot be confirmed using the mortgage database, since the database does not include details on the type or size of the dwelling that was purchased.

The literature emerging abroad on housing market trends as a result of the pandemic points to a shift in demand for homes (whether for purchase or rental) to less densely populated areas, which is reflected in migration from large urban centers to the suburbs or rural areas, mainly within the large metropolises in the US but also between metropolises (Liu and Su, 2021; Ramani and Bloom, 2021; Gupta et al., 2021). The literature explains this migration based on a number of factors: a shift to working from home, primarily among high-earning workers (who in the past preferred to live in the large city centers that are close to concentrations of workplaces that are now allowing work from home); a decline in the consumption of services that tend to be concentrated in city centers, which has weakened the desire to live there; and the lower home prices in the suburbs relative to the city centers, which makes it possible to acquire a larger home among other things.

Haslag and Weagley (2021) investigated migration between states in the US and found that following the onset of the crisis the migration of better-off households was motivated by reasons related to lifestyle and family more than reasons related to employment, while among low-earning households migration was primarily for economic reasons. This was according to self-reporting by respondents who had moved residence. On the other hand, it was high-earning households that chose to move to less densely populated areas, where the cost of living is relatively low, and to states with lower local tax rates.

The discussion in the literature surrounds the change in priorities among buyers as a result of the crisis, namely the move to less densely populated areas. We categorized cities in Israel according to type and size in order to attempt to determine whether there have been similar changes in tastes among home buyers in Israel. In other words, has the relatively low population density in rural areas and small towns attracted home buyers? Figure 6 indicates that no major changes in preferences can be identified among the two types of buyers.[10]

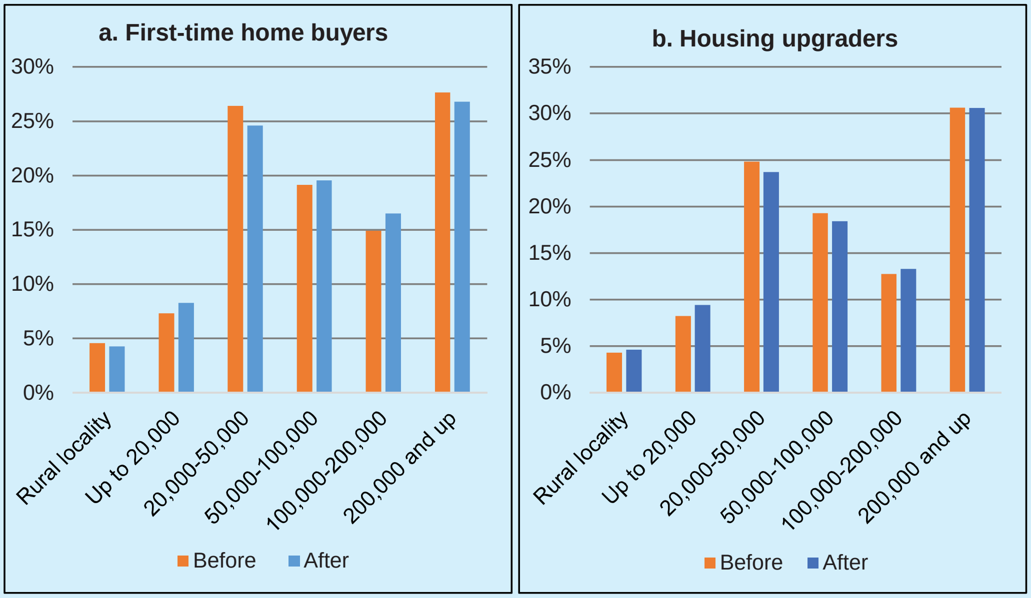
As such, what can explain the observed lack of change in preferences? First, the data relate to mortgages that were provided (and the homes that were purchased) until the end of the first half of 2021, while a change in tastes, as well as the very decision to buy a home, involve a prolonged process.[11] Second, the studies quoted look at internal migration without differentiating between ownership and rental, while we only examined purchases. The purchase decision takes into account permanent factors and is therefore less influenced by a transitory crisis. In contrast, the decision to rent is more flexible. Working from

[9] Chapter 9 of this Report presents evidence of an increase in demand for single-family houses and garden apartments following the onset of the crisis.

[10] Due to the general increase in the number of homes purchased during the period following the onset of the crisis, the absolute number of homes purchased in small towns and rural areas has increased, despite their relatively low weight in total purchases.

[11] According to an analysis carried out by the Ministry of Finance based on more up-to-date data (the third quarter of 2021), there is no evidence of a shift from the center to the periphery. The increase in the weight of purchases in the periphery among housing upgraders was not substantial, and among first-time home buyers it is apparently explained by economic constraints. Similarly, it was not found that homes purchased in the periphery were more expensive than in the past. Indeed, the rates of increase in the prices of homes purchased in the center and in the periphery were similar in the fourth quarter of 2019 and the third quarter of 2021. (See “Survey of the Residential Real Estate Sector in the Third Quarter of 2021”, Chief Economist Branch in the Ministry of Finance [in Hebrew]).

Figure 6
Distribution of Purchased Properties, Before and After the Start of the Crisis, by Type and Size of Locality (as a share of total purchases by each buyer type)



SOURCE: Based on banks' reports to the Banking Supervision Department.

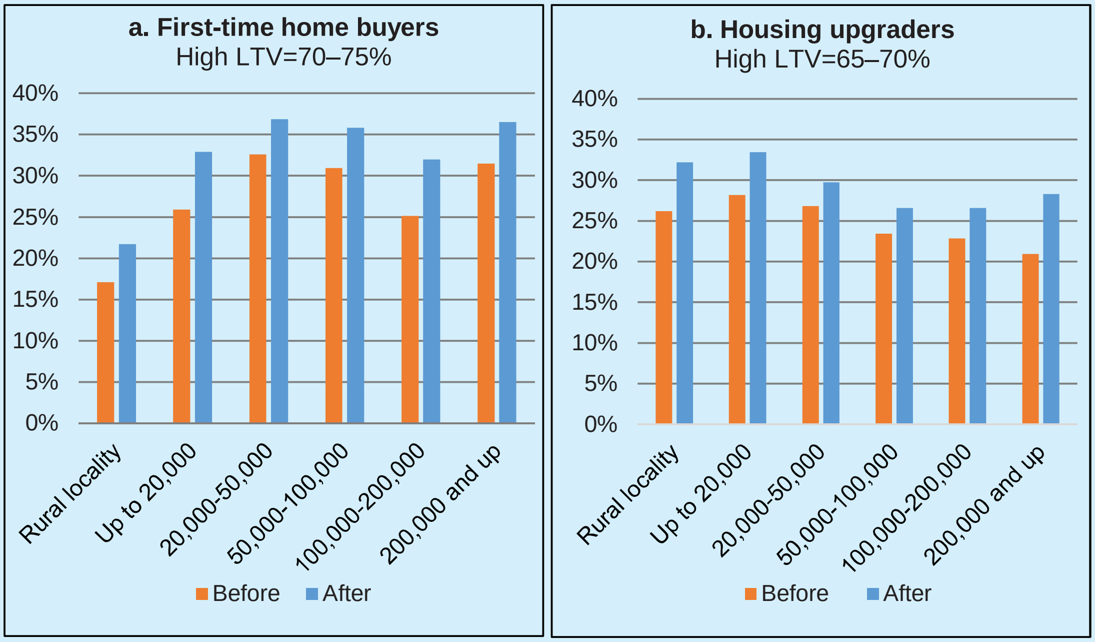
home will apparently not become a permanent way of working in Israel, at least according to the data on occupancy of office buildings in the main cities.[12] Third, some of the purchases by first-time home buyers are part of the Buyer's Price program, for which lotteries were held several years ago, and are therefore not affected by the current crisis. According to Banking Supervision Department data, during the period we defined as "prior to the crisis", about 36 percent of the mortgages that were provided to first-time buyers were part of the program, compared with about one-quarter during the period after the onset of the crisis. Furthermore, not all of the dwellings purchased in the program are meant to be used as the residence of the lottery winners themselves. Fourth, our analysis did not make it possible to identify moves between neighborhoods or between homes in the same town, and the higher value of the purchased home may be a result of the preference for larger and more spacious homes in the same city.

In another analysis, we tried to determine whether the increase in leverage of mortgages is a phenomenon unique to the purchases in a certain category of cities or whether it involves all of them. To this end, we looked at the proportion of mortgages before and after the onset of the crisis in which the loan-to-value ratio is at the maximum, i.e. between 70 and 75 percent for first-time buyers and between 65 and 70 percent for housing upgraders, in each category of cities. The results are presented in Figure 7, and show

[12] According to data from the CBRE company (a global American company that provides commercial real estate and investment services), which surveys office space in Tel Aviv, Ramat Gan, Herzliya, Ra'anana, Petah Tikvah, Netanya, Rehovot, Lod, Haifa, and Jerusalem, the occupancy rate of offices during the third quarter of 2021 was similar in most of the cities to what it was in in the same quarter in 2019 (prior to the onset of the global crisis).

that the proportion of highly leveraged mortgages grew among both types of buyers in all categories of cities (with a deviation of between 3 and 7 percentage points). This across-the-board increase implies that in the face of increasing home prices borrowers sought larger mortgages since their equity capital had not risen by a similar rate. Therefore, the loan-to-value ratios rose and with them the proportion of mortgages provided at the maximum ratios.

Figure 7
Rate of Mortgages with High LTVs, Before and After the Start of the Crisis, by Buyer Type



SOURCE: Based on banks' reports to the Banking Supervision Department.

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Haslag, P. and D. Weagley (2021). "From L.A. to Boise: How Migration Has Changed During the COVID-19 Pandemic", Working Paper.

Liu, S. and Y. Su (2021). "The Impact of the COVID-19 Pandemic on the Demand for Density: Evidence from the U.S. Housing Market", *Economic Letters*, 207: 110010

Ramani, A. and N. Bloom (2021). "The Donut Effect of COVID-19 on Cities", NBER Working Paper No. w28876.

Following a decline in nonhousing debt in 2020 during the pandemic, it recovered in 2021 and grew at a higher rate than in previous years. The vast majority of nonhousing credit is provided by the banks, with the rest coming from the credit card companies and the institutional investors. Nonhousing debt to the banks, which contracted significantly in 2020 due to the pandemic, resumed its growth in 2021 at a somewhat higher rate than in previous years. Credit from institutional investors featured particularly high rates of growth. Total nonhousing debt to the institutional investors even exceeded debt to the credit card companies for the first time in ten years. Household debt to the institutional investors is generally characterized by large loans which are provided against collateral (such as the recipient's pension fund) and at relatively low interest rates. These loans are usually provided to borrowers with a relatively high socioeconomic status. (See the Annual Report on the Implementation of the Credit Data Law.) This is an indication of an effect from the demand side. In view of their large size and relatively low cost, these loans are liable to be used as supplementary financing for the purchase of real estate. (For further details, see Box 3 in the Financial Stability Report for the Second Half of 2021.) Debt to credit card companies, which shrank in 2020, recovered during 2021, and grew by about 8 percent. Regulatory changes were introduced in 2021.[5] In particular, the credit facilities on bank credit cards were reduced, which is intended to encourage customers to take out consumer credit from the credit card companies.

b. Government and Bank of Israel programs to support the provision of credit to small businesses

As part of the measures for dealing with the COVID-19 crisis, the government and the Bank of Israel decided (separately) to introduce programs to support the supply of credit to small businesses. These consisted of State-backed credit funds and a Bank of Israel program to provide monetary loans.

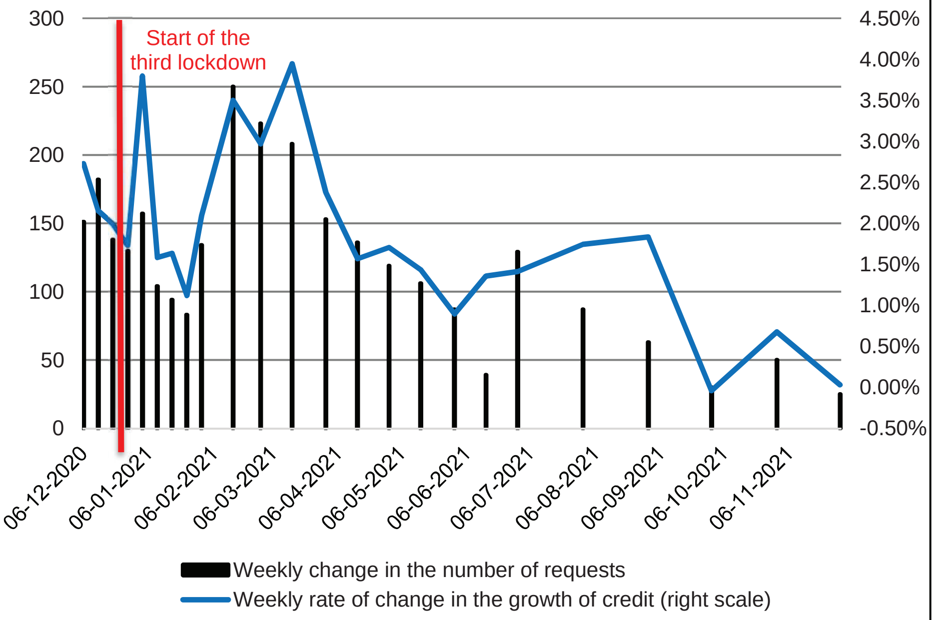
The State provided guarantees for loans to the business sector by way of designated loan funds, with the goal of increasing the supply of credit to businesses. (For further details, see Chapter 4 in the Bank of Israel Annual Report for 2020.) Two funds were created that focused on small businesses (the Fund for Small Businesses and the Fund for High-Risk Small Businesses) and another that focused on large businesses, though there was not much demand for the latter.

As the restrictions became more stringent during the third wave of infection and the third lockdown (which began in January 2021), the number of requests made to the two funds for small businesses increased, and the rate of change in the amount of credit provided increased. With the end of the third wave and the exit from the lockdown, there was a slowdown in the number of requests and a drop in the amount of new credit provided (Figure 4.6). An examination of the constraint in obtaining credit as

[5] The two largest banks were required to reduce the credit facilities on credit cards by 45 percent for each of their customers, based on their levels at the end of 2015, subject to a minimal monthly threshold of NIS 7500.

reported in the Business Tendency Survey shows a decline in credit constraints during this period, which indicates a drop in the demand for credit from the fund. This was due to the recovery in economic activity and the easing of cash flow difficulties that were the result of low levels of activity.

Figure 4.6
Weekly Change in the Volume of Requests and Growth of Credit Provided in the Fund for High-Risk Small Businesses

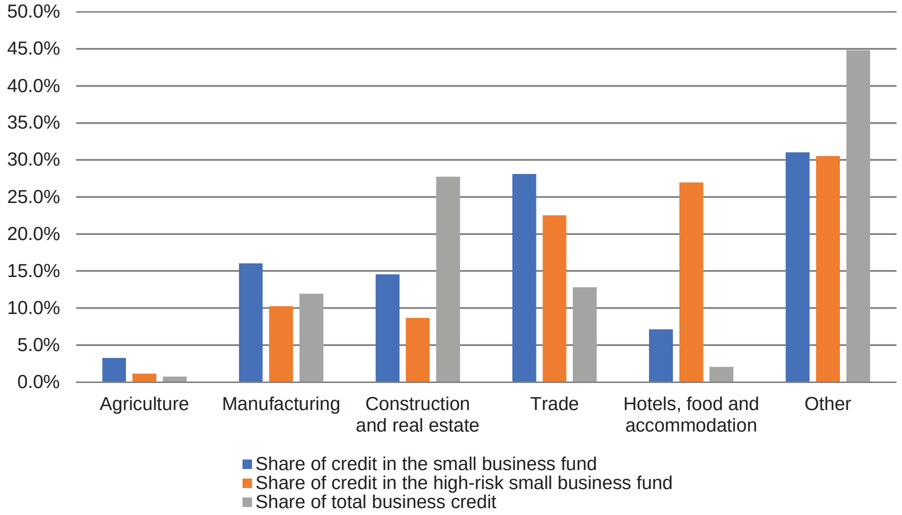


SOURCE: Based on banks' reports to the Banking Supervision Department.

An examination by industry shows that the weight of the hotel, accommodation and food services industry within the Fund for Small Businesses was higher than its share of total business sector debt, and was even higher in the Fund for High-Risk Small Businesses (Figure 4.7). In contrast, the share of credit provided by the Fund for Large Businesses to the construction and real estate industry was low relative to the industry's share of bank credit. These findings indicate a certain amount of correlation between the harm suffered by an industry as a result of the pandemic and the degree of support from the funds in the provision of credit.

Alongside the State-backed funds, the Bank of Israel implemented a program to provide monetary loans to the banks, with the goal of providing credit to small businesses. About NIS 40 billion was distributed through this program. The program included two types of loans. The first provided the banks with loans at an interest rate of 0.1 percent for a period of three years, while the second provided them with loans at a fixed interest rate of -0.1 percent for a period of four years with the condition

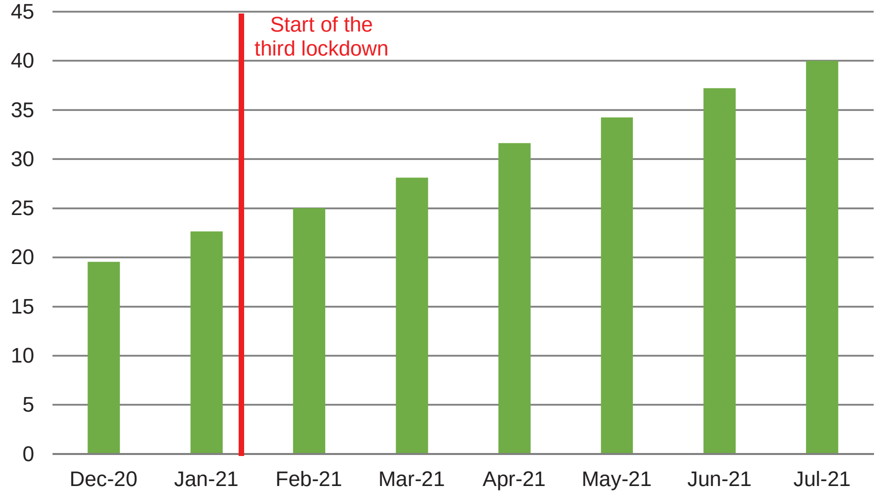
Figure 4.7
Industries' Share of Business Credit and of Credit from the State-Backed Funds



SOURCE: Based on banks' reports to the Banking Supervision Department.

that the interest rate charged on loans to small businesses would not exceed the prime rate + 1.3 percent. The provision of the second type of loan began in December 2020, with a cap of NIS 10 billion or a time limit of up to the end of June 2021. In January 2021, with the imposition of the third lockdown, the total monthly quantity of loans provided through this channel increased relative to the previous month, and following the exit from the lockdown the quantity of loans provided returned to its average level

Figure 4.8
Monthly Volume of Loans in the Bank of Israel's Monetary Loan Program
(NIS billion)



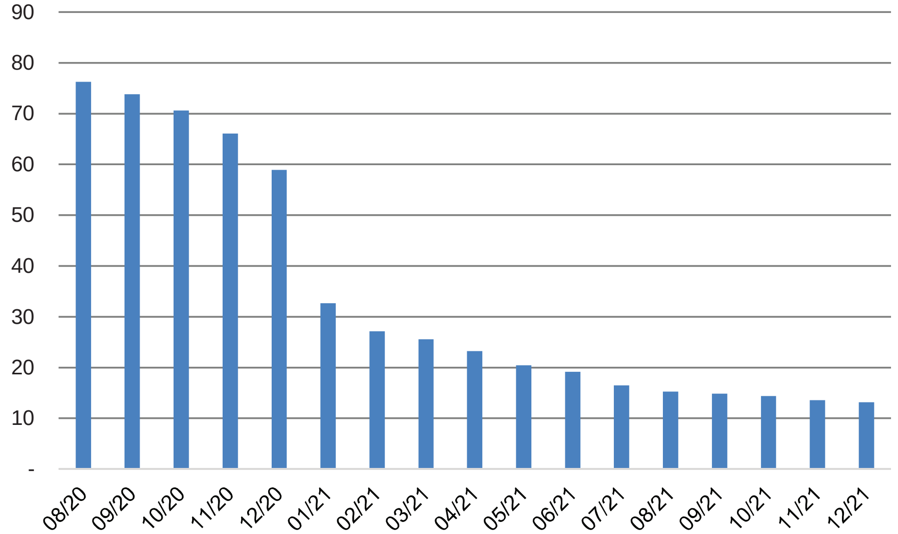
SOURCE: Based on banks' reports to the Banking Supervision Department.

of about NIS 1 billion per month. The provision of the second type of loan was ended when it reached about 80 percent utilization (NIS 8 billion out of the NIS 10 billion that had been allocated). Once the provision of credit of the first type reached about NIS 32 billion, the program was ended as planned in July 2021.

c. Payment deferrals

At the end of 2021, the total amount of deferred debt was about NIS 13 billion. In absolute terms, the largest amount of deferred debt was in housing loans, while the largest deferral proportion was among large businesses. In 2020, the Banking Supervision Department formulated a voluntary plan for the deferral of payments on existing loans with the aim of assisting households and businesses in dealing with their cash flow difficulties. During 2020, the plan was extended several times due to the lockdowns and morbidity levels. At the beginning of 2021, there was a major decline in total deferred debt, apparently because the deferral period set by the bank had expired for some borrowers, who were required to resume their payments. Nonetheless, the downward trend continued throughout 2021 as the economic recovery progressed.

Figure 4.9
Balance of Deferred Debt to the Banks (NIS billion)



SOURCE: Based on banks' reports to the Banking Supervision Department.

BOX 4.4: THE EXPECTED EFFECT OF CANCELLING EARMARKED BONDS IN THE PENSION FUNDS

- In 2021, a reform was passed into law cancelling the option for pension funds to invest in earmarked bonds, and offering an alternative: a guaranteed return of 5.15 percent on 30 percent of their asset portfolio.
- It appears that the volume of the domestic market is small relative to the size of the pension portfolio (and institutional investors in general) and relative to the level of net deposits. Furthermore, there are other short- and long-term investors active in the market.
- The cancelation of earmarked bonds is expected to expand the foreign assets component in the portfolios of the new pension funds.

During the previous two decades, a number of major legislative measures and regulatory changes were implemented in the long-term savings market. These primarily included the introduction of compulsory pension savings for all employees in the economy and raising the retirement age, alongside structural changes such as the Bachar reform, the opening of new pension funds and the reform of capital gains taxation. These changes led to rapid growth in the volume of assets managed by the pension funds. These funds manage the vast majority of the public's long-term savings, and enjoy a continual flow of capital as a result of deposits made by their members (pension deductions that are compulsory by law). The goal of the pension funds is to invest their long-term assets in order to maximize yield and ensure a reasonable pension for their members.

The pension funds invest part of their assets in earmarked bonds, which are issued by the government and which guarantee a real return of 4.8 percent. This is a substantial benefit that has changed over time. In 2003, a reform was implemented that reduced the proportion of the funds' investment in earmarked bonds from 70 percent to 30 percent. This divided the pension funds into old pension funds, whose proportion of earmarked bonds was about 70 percent, and new pension funds[1] whose proportion was about 30 percent. The old pension funds are not open to new members and therefore this box will focus on the new pension funds.

In 2021, another reform was implemented[2], cancelling the option for pension funds to invest in earmarked bonds and offering an alternative that guarantees a return of 5.15 percent on 30 percent of their portfolio. According to the new mechanism, accounts will be reconciled every five years between the pension funds and the State with respect to the guaranteed part of the asset portfolio. If the yield on the assets is lower than the guaranteed rate, the State will make up the difference, and if the return on the assets is higher, the surplus will be transferred to the State. The effect of the reform on the allocation of assets by the pension funds will be described below.

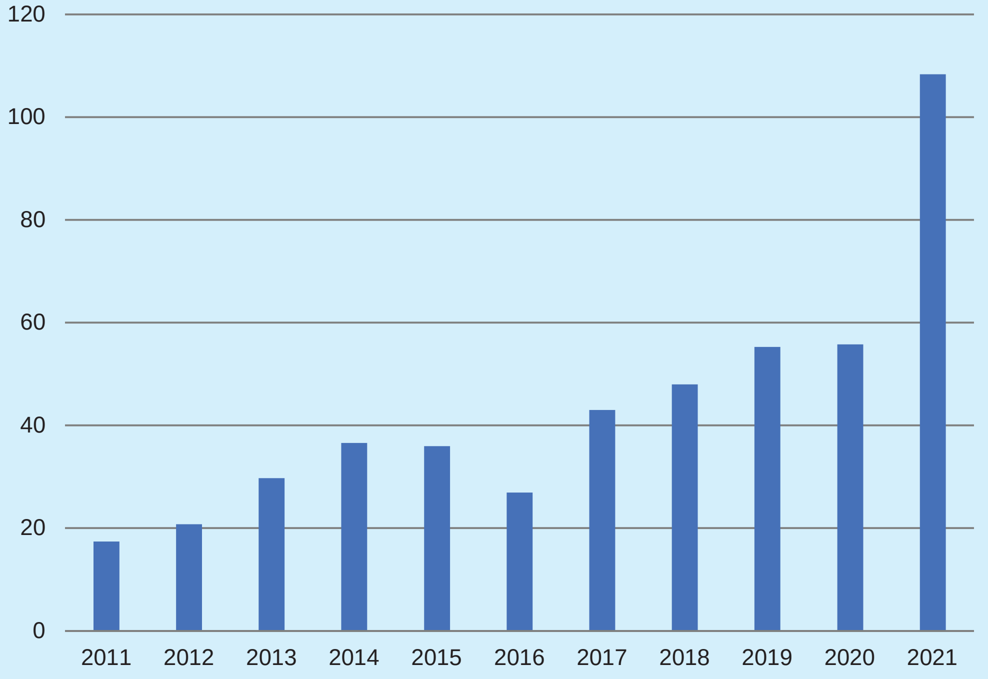
[1] The new pension funds themselves are divided into general funds and comprehensive funds. The comprehensive funds are permitted to invest in earmarked bonds, and deposits in such funds are therefore limited in amount. The remaining pension amounts can be deposited in the general (complementary) pension funds, which cannot purchase earmarked bonds.

[2] The implementation of the reform was deferred to October 2022.

The total asset portfolio of the new pension funds

The total asset portfolio of the new pension funds reached a total of about NIS 626 billion in 2021. This followed an upward trend in deposits by their members over the years. In 2021, the annual accumulation (net new deposits) reached about NIS 40 billion (compared to an annual average of NIS 28 billion in the last 10 years). An examination of the change in total managed assets (as a result of both deposits by members and growth in market value) shows that during the last 10 years the total rose by an average annual amount of abut NIS 46 billion, while in 2021 it rose by more than NIS 100 billion, as a result of the sharp price rises in the markets (Figure 1). It should be mentioned that growth in assets that is the result of an increase in market value still requires investment decision making on the part of the pension funds, based on considerations of asset diversification and the extent of exposure to foreign assets and foreign currencies. Thus, for example, if the equity index rises and the fund wishes to limit its exposure to equities, it must sell some of the assets it has invested in equities and reinvest them in another vehicle. This is also the case for the effect of changes in asset prices abroad.

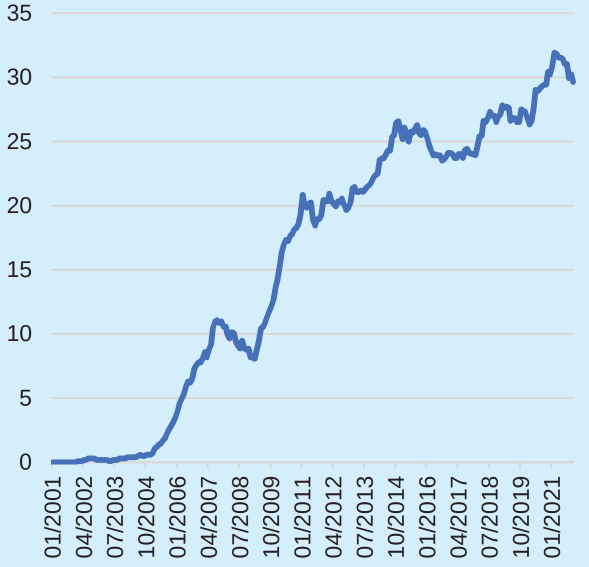
Figure 1
Change in Volume of Assets Managed by the New Pension Funds



SOURCE: Based on institutional investors and the Tel Aviv Stock Exchange.

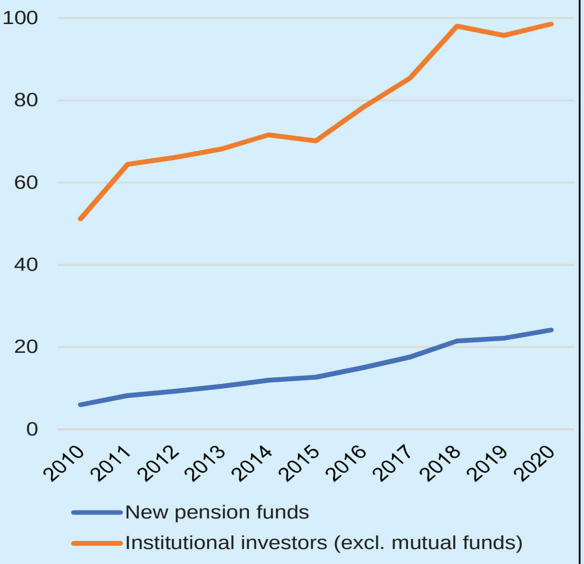
The new pension funds invest their assets both in the domestic market and abroad.[3] Since 2005, the proportion of foreign assets in the new pension funds has been in an upward trend, reaching about 30 percent in 2021 (Figure 2). In the domestic market, the funds invest in a wide variety of assets (deposits, bonds, and equities). Nontradable government bonds[4] are the dominant asset, and they consist primarily of earmarked bonds, which account for about 30 percent of their portfolio, followed by equities, deposits, "other assets", and corporate bonds. The assets invested abroad also include a variety of assets, including bonds, equities, and derivative assets. The latter are partly used for hedging currency risk.

Figure 2
Rate of Foreign Assets in the Pension Funds' Portfolio (percent)



SOURCE: Based on institutional investors and the Tel Aviv Stock Exchange.

Figure 3
Institutional Investors' Assets as a Share of Total Assets Traded on the Tel Aviv Stock Exchange (percent)



SOURCE: Based on institutional investors and the Tel Aviv Stock Exchange.

Total assets held by the new pension funds relative to the size of the domestic market and total capital raised

An examination of the total value of assets managed by the new pension funds in the domestic market relative to the total market value of equities, corporate bonds, and government bonds combined shows an upward trend since 2010. In 2020, total assets managed by the new pension funds reached 24 percent of the value of assets traded on the TASE. (The total assets of all of the institutional investors, apart from

[3] A reform was adopted in 2005 that lifted the restrictions on investment abroad that applied to institutional investors (and in particular pension funds).

[4] The holdings of government bonds primarily include earmarked bonds.

the mutual funds, reached 99 percent; see Figure 3.) A comparison of the total capital raised (net equities and bonds) in the market to the net accumulation in the new pension funds between 2018 and 2021 shows that the domestic total of bond and equity issuances was similar to the total accumulation in these funds, and the total issuances of equities alone was smaller than the total accumulation in each of the previous ten years.

Based on an examination of the restrictions on pension fund investments in the domestic market, there is evidence of regulatory constraints that prevent them from investing more. However, it appears that the volume of the domestic market is small relative to the size of the pension portfolio (and institutional investors in general) and relative to net deposits. Moreover, there are additional investors operating in the market, both short-term and long-terms.

With respect to the advantages of pension fund investment in the domestic market—and first and foremost the expansion of the supply of capital to finance business activity—there are also negative consequences, at least potentially. The holding of various assets by the pension funds during a crisis is liable to affect the value of those assets, primarily when there is high volatility in the market—which indeed occurred during the COVID-19 crisis in March 2020. (For further details, see Box 3 in the Financial Stability Report for the Second Half of 2020.) During a normal period, significant holdings by the pension funds are likely to reduce the liquidity of trading. (See "Developments in the Public's Financial Conduct in Israel during the Past Decade and its Implications for the Capital Market"[5], a working paper published by the Israel Securities Authority.) This is due to the fact that their members are long-term investors who are uninterested in frequent trading.

The institutional investors, as mentioned, also invest in foreign currency and in foreign countries, and therefore have an effect on the foreign currency market. The investment strategies of the institutional investors can therefore lead to selling (or buying) of foreign currency in significant amounts. Thus, during the sharp declines in equity prices abroad, the position of the institutional investors (particularly in futures contracts) led to a demand for high levels of collateral, which was reflected in elevated demand for dollars. For further details, see Chapter 3 of the Bank of Israel Annual Report for 2020 and Box 3 in the Financial Stability Report for the Second Half of 2020.

The effect of cancelling earmarked bonds on the pension funds' mix of assets

As a result of the cancelation of earmarked bonds and the growth in managed assets, and in turn the redemptions of the earmarked bonds, the proceeds will be invested in other ("free") investment channels that will gradually replace the investment in earmarked bonds. The reform requires the pension funds to invest the money that was previously invested in earmarked bonds according to the mix of assets in the fund's main track. Forecasted redemptions of the earmarked bonds indicate that the NIS 135 billion in earmarked bonds held by the new pension funds is expected to gradually be reduced to zero by 2036.

It is reasonable to assume that the assets previously invested in the earmarked bonds will be allocated proportionally based on the composition of the free portfolio without earmarked bonds. However, we cannot rule out the effects of future trends in the markets, regulatory measures, and other factors on

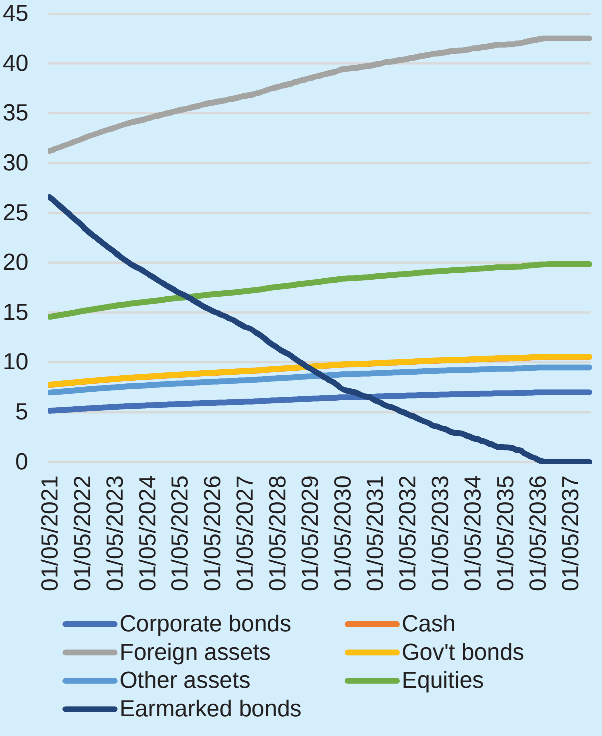
5 https://www.isa.gov.il/GeneralResearch/179/Documents/Institutional_Developments_Heb.pdf [in Hebrew].

the rate of adjustment and on the composition of the portfolio. There is also the possibility of structural changes, regarding which it is difficult to assess the direction of their effect.

The following analysis deals with a number of benchmarks for the mix of assets in the funds. First, we must take note of the following insights: The change in the guaranteed return mechanism from earmarked bonds to a “guaranteed return inventory” does not change the portfolio’s risk profile for the fund member, since 30 percent of the portfolio will continue to provide a fixed guaranteed return (5.15 percent instead of 4.86 percent). Furthermore, the allocation of the “guaranteed return inventory” must be managed in the same manner as the nonguaranteed assets in the fund’s largest track. Currently, an institutional investor allocates its assets with the goal of maximizing its risk-return profile. It is expected to maintain a similar asset allocation after the reform, with a guaranteed return on 30 percent of its portfolio. Therefore, it appears that the most likely scenario is management according to the asset allocation in the comprehensive pension funds’ ”free” portfolio—the mix of “nonguaranteed” assets—and therefore this mix was chosen to be the main benchmark. However, if market conditions (or other factors) change in the future, there may be a change in the allocation of assets in the entire portfolio. It is difficult to predict future trends, but a sensitivity analysis of the main scenario makes it possible to evaluate two additional scenarios that involve the allocation of assets by institutional investors with similar investment goals but that do not currently invest in earmarked bonds: the general pension funds and the provident funds. Therefore, the following three benchmarks were selected:

1. The “free” portfolio of the comprehensive pension funds: a mix of “nonguaranteed” investment channels (the distribution of investment channels apart from earmarked bonds in the new pension funds). This benchmark is based on the insight that the asset portfolio’s risk profile for the member is left unchanged by the reform. The current situation is that 30 percent of the portfolio provides him with a guaranteed return and it will remain so even after the change in the guaranteed return mechanism.[6] Therefore, just as an institutional investor currently allocates its assets among the

Figure 4
Asset Allocation of the New Pension Funds in a "Free Portfolio" Scenario
(percent of the total asset portfolio)



SOURCE: Based on institutional investors reports.

[6] In fact, the guaranteed return will increase to some extent – from 4.8 percent to 5.15 percent.

various investment channels with the goal of maximizing its risk-return profile where 30 percent of the portfolio has a guaranteed return, it is expected to continue doing so after the reform.

2. The mix of assets in the general pension funds: These funds do not invest in earmarked bonds, and therefore serve as an indicator of the way in which an institution that has a target function of long-term saving without any guaranteed return mechanism will invest. The disadvantage of this benchmark is that the general funds manage relatively small sums, and conclusions drawn from their behavior regarding the management of larger portfolios are less reliable.
3. The mix of assets in the provident funds: This benchmark was chosen according to logic similar to that used in the case of the general pension funds. However, the investment policy of the provident funds differs from that of the mutual funds, making this a less likely scenario.

The scenarios were constructed on the basis of the forecasted volume of investment assets (the "guaranteed return inventory") that are expected to be invested in other investment channels. The results of the main scenario are presented in Figure 4.

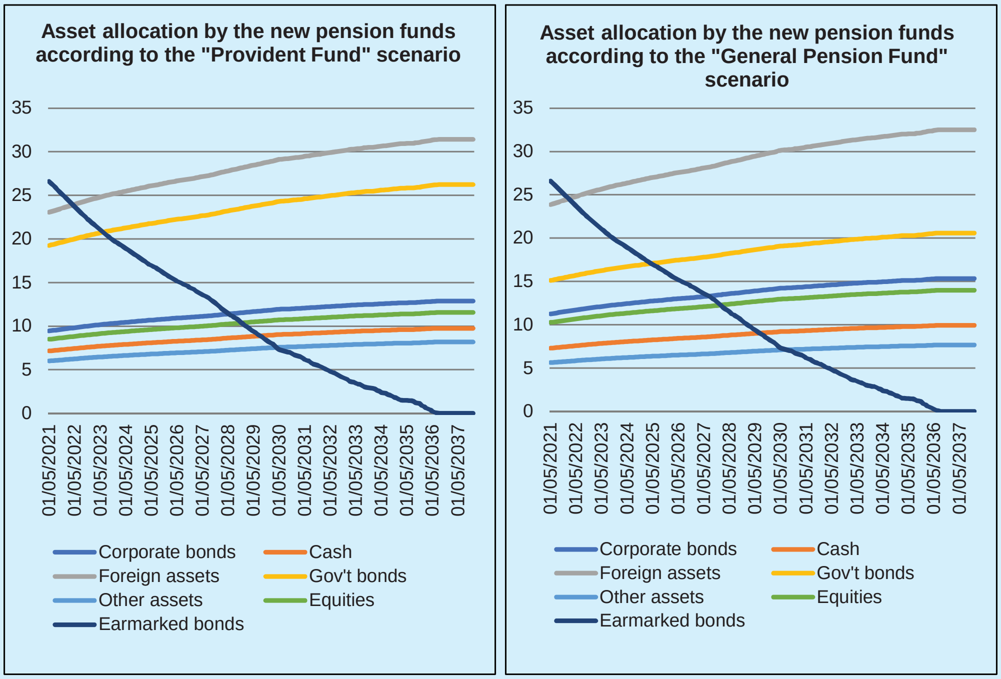
The main scenario (allocation according to the mix of "nonguaranteed" assets) shows that the weights of foreign assets and equities are expected to grow to a significant extent. This implies an increase in exposure to foreign assets. A breakdown of the portfolio into foreign and domestic assets shows that an increase is also expected in the domestic component. In other words, there will be a larger inflow of capital into the domestic capital market, which is likely to present a challenge with respect to both the total size of the market and the various investment restrictions imposed on institutional investors (control restrictions, limits on holding of bond series, etc.).

Another aspect of the cancelation of earmarked bonds is the issuing of debt by the State. The of government bonds component within the portfolio is expected to decline, which will in turn reduce the demand for these bonds.

According to the sensitivity scenarios (allocation according to the mix of assets in the general pension funds and in the provident funds) as well, an increase is expected in the proportion of foreign assets in the portfolio (although it is more moderate than in the first scenario), but an increase in the government bonds component is also expected. In this case, and alongside the increased exposure to foreign assets (and a possible increase in currency exposure) there is also a moderating effect on both the portfolio's risk, as a result of the larger government bonds component, and the demand for government bonds.

In conclusion, the scenarios indicate that the foreign assets component in the portfolio of the new pension funds is expected to remain large and to continue to grow. The increase in exposure to foreign assets presents certain challenges to institutional investors, from the standpoint of choosing investment vehicles and hedging currency exposure, and with respect to the effect on the exchange rate.

Figure 5
Scenarios for Allocating the "Guaranteed Return Inventory" by General and Provident Funds (percent of the total asset portfolio)



SOURCE: Based on institutional investors reports.