Chapter 4
FINANCING OF THE PRIVATE SECTOR IN ISRAEL

- The private sector (households and businesses) finances its activity with a relatively high level of equity and a relatively low level of debt. In other words, it is less leveraged than in the past and also relative to other countries. This chapter suggests possible explanations for this.
- Private debt (of businesses and households) grew in 2019 at a similar rate to the growth of GDP and stood at 110 percent of GDP. Household debt grew faster than business debt.
- The private debt to GDP ratio in Israel is low by international comparison, due to an historical and relatively constant gap in household debt between Israel and the other OECD countries and the gap that opened in the business debt to GDP ratio between 2008 and 2015 and has persisted subsequently.
- The gap between Israel's business debt to GDP ratio and that of other countries is primarily the result of structural changes in the business sector: an increase in the hi-tech industry's weight in economic activity and a decline in the activity of holding companies, alongside a shift in bank credit toward households.
- During the past two years, the long-term trend has reversed. Bank credit to large businesses again increased at a high rate, while the growth of bank credit to small and midsize businesses slowed.
- The advancement of the securitization law and the expanded access of small and midsize businesses to nonbank financial institutions can lead to expanded supply of nonbank credit to such businesses.
- Households' housing debt grew at a high rate this year, due to the maturing of transactions in the Buyer's Price program, regulatory changes instituted in past years, and a drop in the mortgage interest rate.
- Households' consumer debt grew this year at a rate similar to recent years. However, the level of bank credit remained almost unchanged while the balance of credit from institutional investors and from credit card companies increased at high rates, in view of structural changes in the credit market and in particular in the credit card market.

1. INTRODUCTION

This chapter presents an analysis of the changes in sources of financing of the nonfinancial private sector (households and businesses) in Israel. Households and businesses use the financing for consumption[1] and investment, and is therefore highly important to the economy.

The chapter describes the main changes to the economy's debt[2] in 2019, and links these changes to the long-term trends in economic activity.[3] Private debt growth was slower this year than in the previous year, and the debt-to-GDP ratio fell by one percentage point. This year's main changes in credit to households featured an acceleration in the growth rate of housing credit, while in terms of nonhousing credit, there was a standstill in credit from the banks and rapid growth of nonbank credit. The growth rate of bank and nonbank credit to businesses as a whole was slightly lower than the growth of GDP. At the same time, there was a large shift from tradable to nontradable nonbank credit.

In addition to the description of the main trends in household debt and business debt this year, this chapter discusses the low level of private sector debt in Israel, which characterizes both of its components—household debt and business debt—relative to other countries.

Studies in recent years have shown that beyond a certain level, an increase in private debt is liable to harm growth.

In the past, it was a commonly held belief that growth in the supply of credit and in the variety of credit intermediaries contributes to economic growth. However, studies in recent years indicate that the marginal benefit from an increase in private sector debt is declining, and that starting from a certain level (a threshold that ranges from 60[4] to 100[5] percent of GDP), an increase in this debt can even have a negative impact on growth. The literature differentiates between household debt, which is primarily for housing, and business debt, and shows that in the long term, household debt, and in particular housing debt above a certain threshold, has a negative effect on growth,

[1] Excluding the banks, insurance companies, and credit card companies.

[2] A loan is debt from the borrower's point of view, and credit from the lender's point of view. Debt is presented according to its valuation and before the loan loss provisions. Credit is presented at market value minus loan loss provisions.

[3] For more discussion on the financial risks, see the Bank of Israel's *Financial Stability Report* for the first half of 2019. For additional graphs and tables on private sector debt and savings, see: Bank of Israel, *Statistical Abstract* for 2019.

[4] P. Benczúr, S. Karagiannis, and V. Kvedaras (2019). "Finance and Economic Growth: Financing Structure and Nonlinear Impact", *Journal of Macroeconomics*, 62; B. Cournède and O. Denk (2015). "Finance and Economic Growth in OECD and G20 Ccountries", OECD Economics Department Working Papers, No. 1223, OECD Publishing, Paris.

[5] J. L. Arcand, E. Berkes, and U. Panizza (2015)."Too Much Finance?", *Journal of Economic Growth*, 20(2): 105–148; S. G. Cecchetti and E. Kharroubi (2012). "Reassessing the Impact of Finance on Growth", BIS Working Paper No. 381.

which intensifies at high levels of debt.[6] In Israel, the rate of household debt is low relative to other countries and far from the threshold above which debt has a impact. The picture regarding business debt is more complex. There are empirical findings that an increase beyond a certain level of economic growth can have a positive[7], negative[8], or statistically insignificant[9] impact, depending on the characteristics of the debt and its level of risk.

There is a historical gap in the private debt to GDP ratio between Israel and other countries, due to the low level of household debt, particularly housing debt. This gap widened between 2007 and 2015 due to a dramatic drop in the business debt to GDP ratio in Israel. The downward trend halted in 2015 and the private sector debt to GDP ratio has been stable since then, as has the gap between Israel and other countries.

The literature indicates that an increase or decrease in the debt-to-GDP ratio may be accompanied by either higher or lower economic growth. It is therefore important to understand what is behind the drop in the business debt to GDP ratio in Israel. The reasons for the downward trend were analyzed in the Bank of Israel's Annual Report for 2018. Here, we will extend the analysis and present the main factors for the historical decline, while differentiating between the structural factors on the demand side and those on the supply side. Similarly, we will determine whether the factors related to the supply of credit have had or are having a negative impact on the business sector's ability to finance its activity.

This chapter analyzes the unique situation in Israel, in which the private sector (households and businesses) finances its activity with a relatively high level of equity and a relatively low level of debt. In other words, it is less leveraged relative to the past and relative to other countries.

[6] A. C. Bertay, D. Gong, and W. Wagner (2017). "Securitization and Economic Activity: The Credit Composition Channel", *Journal of Financial Stability*, 28: 225–239.

A. Mian, A. Sufi, and E. Verner (2017). "Household Debt and Business Cycles Worldwide", *The Quarterly Journal of Economics*, 132(4): 1755–1817.

A, Zabai (2017). "Household Debt: Recent Developments and Challenges", BIS Quarterly Review, December.

[7] The research finds that an increase in debt by means of nontradable loans has a positive effect: P. Benczúr, S. Karagiannis. and V. Kvedaras (2019). "Finance and Economic Growth: Financing Structure and Nonlinear Impact", *Journal of Macroeconomics*, 62.

[8] B. Cournède. and O. Denk (2015). "Finance and Economic Growth in OECD and G20 Countries", OECD Economics Department Working Papers, No. 1223, OECD Publishing, Paris. The research finds that an increase in business sector debt that is accompanied by an increase in the issuance of low-rated bonds has a negative effect: D. Kirti (2018). "Lending Standards and Output Growth", International Monetary Fund Working Paper No. WP/18/23.

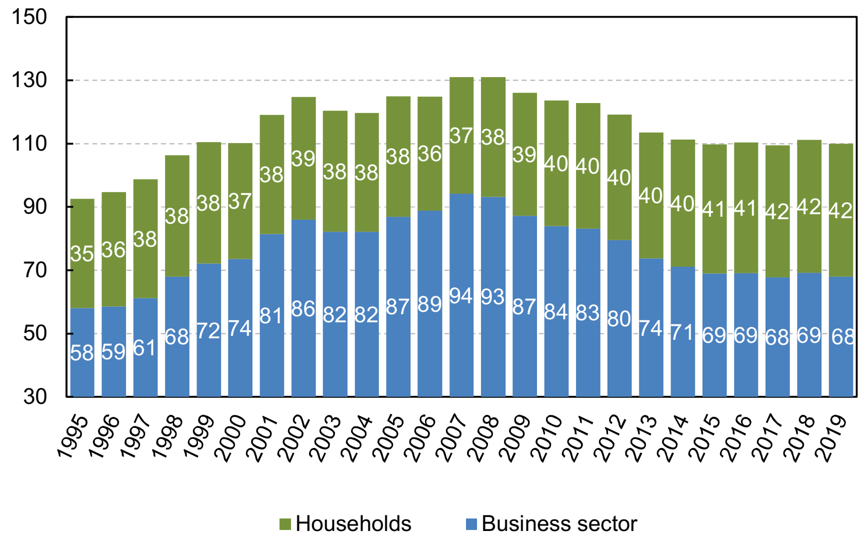
[9] A. Mian, A. Sufi, and E. Verner (2017). "Household Debt and Business Cycles Worldwide", *The Quarterly Journal of Economics*, 132(4): 1755–1817.

2. DEVELOPMENTS IN PRIVATE DEBT IN 2019

Private sector debt increased in 2019 at a lower rate than in 2018, and at a slightly lower rate than GDP.

Private sector debt (households and businesses) grew in 2019 by a lower rate (4.4 percent) than in 2018 (6.4 percent), to NIS 1,546 billion. This represents 110 percent of GDP, which is a drop of one percentage point relative to the previous year (Figure 4.1). The low rate of growth and the slight drop in the private debt to GDP ratio reflects a decline of about one percentage point in the business debt to GDP ratio, which was about 68 percent at the end of 2019. The household debt to GDP ratio remained stable at 42 percent.

Figure 4.1
Nonfinancial Private Sector Debt as a Share of GDP, 2004–19



SOURCE: Bank of Israel.

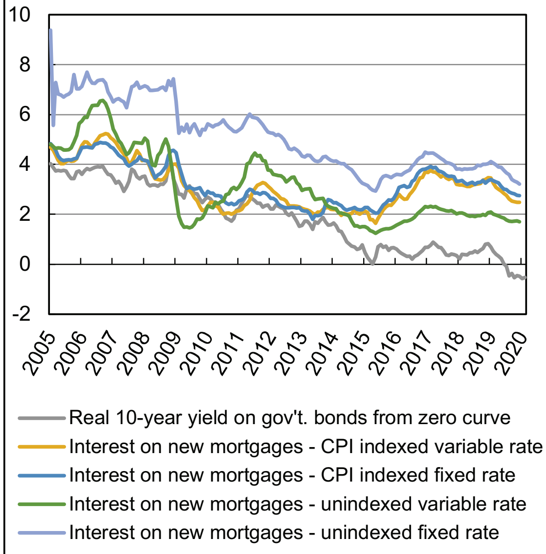
a. Developments in household debt in 2019

In view of the increase in private consumption this year, which exceeded the GDP growth rate (Chapter 2), and the high level of activity in the housing market (Chapter 8), household debt grew this year at a rate of 5.6 percent, which is slightly higher than the rate of growth in 2018 and 2017 (5.2 percent), reaching a level of NIS 588 billion (Table 4.1). The growth of debt this year was primarily due to growth in housing debt to the banks (7.5 percent), but also due to an increase in consumer debt (households' nonhousing debt) to all nonbank credit providers (14 percent). In contrast, households' nonhousing debt to the banks remained almost unchanged this year.

Another contributory factor to housing debt was a drop in mortgage interest rates since the beginning of 2019, in parallel to an even sharper drop in the real yield on government bonds, which points to a decline in the banks' financing costs (Figure 4.2). Accordingly, it can be argued that the bank spread on mortgages (interest income less financing costs) has increased somewhat. The increase in the spread may indicate an increase in households' demand for housing credit, or a change in the composition of borrowers. It may also indicate an increase in the inherent risk of this sector in view of the increase in transactions in the housing market and the maturing of Buyer's Price transactions as they reach the contract signing and

The decline in mortgage interest rates led to an increase in housing debt and in mortgage refinancing.

Figure 4.2
Mortgage Interest Rates and Real 10-Year Yields on Government Bonds from the Zero Curve, 2005–19



SOURCE: Bank of Israel.

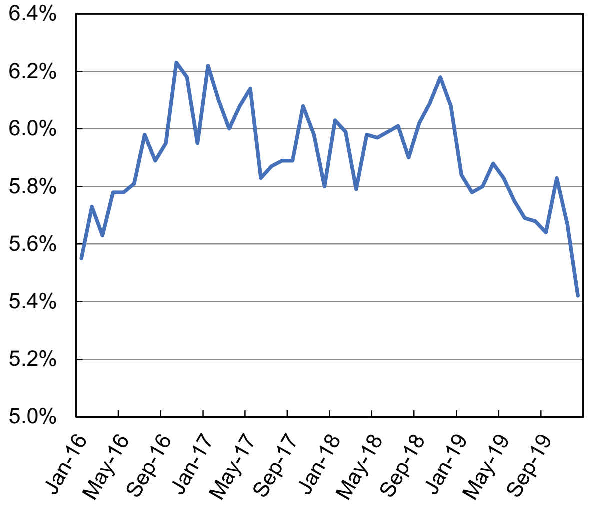
Table 4.1
Outstanding Household Debt, 2016 to 2019 (end of period)

	Balance (NIS billion)				Rate of change from previous period (percent)[a]			
	2016	2017	2018	2019	2016	2017	2018	2019
Total household debt[b]	**503**	**529**	**557**	**588**	**6.1**	**5.2**	**5.2**	**5.6**
By sources:								
From the banks:	**455**	**474**	**496**	**521**	**5.2**	**4.0**	**4.7**	**5.0**
of which : Housing	301	317	339	364	5.7	5.3	7.0	7.5
Nonhousing[c]	155	157	157	156	4.2	1.5	0.0	-0.4
From institutional investors	**17**	**24**	**29**	**33**	**52.4**	**40.0**	**20.3**	**14.6**
of which : Housing	7	12	14	14	131.7	58.8	15.3	3.4
Nonhousing[c]	10	12	15	19	20.7	25.6	25.1	24.7
From credit card companies[d]	**16**	**19**	**21**	**23**	**19.1**	**16.9**	**10.2**	**12.7**
From the government (earmarked credit)[e]	**15**	**13**	**12**	**11**	**-11.5**	**-12.3**	**-8.0**	**-3.8**
By uses:								
Total housing debt	**318**	**337**	**360**	**386**	**6.2**	**6.0**	**6.8**	**7.0**
Total nonhousing debt	**185**	**192**	**197**	**202**	**6.1**	**3.7**	**2.5**	**3.0**

[a] In the current year, the change is from the start of the year.
[b] Excluding debt from nonresidents, due to a lack of data. Data on debt to the banks are based on monthly balance-sheet data and not on annual balance-sheet data, since the statements for 2019 have not yet been published.
[c] Including nonresidential loans issued with a dwelling as collateral.
[d] Debt to the credit card companies and credit backed by the banks are included in bank data. Credit card company data are as of September 2019, since the annual statements for 2019 have not yet been published.
[e] Loans from the government to borrowers generally pass through the banking system, which serves as a pipeline for the transfer of payments. The main portion is loans from the government, but the items also include loans to workers from employers who are not
SOURCE: Bank of Israel.

payment stage (for further details, see Chapter 8). The drop in mortgage interest rates has apparently also led to an increase in the rate of mortgages taken out in order to refinance previous mortgages (from 13 percent of the loans at the beginning of the year to 22 percent at the end of the year). Thus, some of the loans were apparently accompanied by an increase in households' disposable income rather than in fact reflecting the purchase of a home.

Figure 4.3
Bank Interest Rates on the Flow of Nonhousing Credit to Households, 2016–19 (monthly data)



SOURCE: Bank of Israel.

The average LTV ratio rose this year as a result of both an easing of regulations and the completion of many Buyer's Price transactions.

The average Loan-to-Value (LTV) rate—the ratio of the mortgage to the value of the asset—increased from 52 percent at the end of 2018 to 54 percent at the end of 2019, which reflected an increase in the share of new mortgages with an LTV of more than 60 percent. This is due to the effect of a regulatory change instituted in 2018 that reduced the equity that the banks must hold against these mortgages, and is also the result of the completion of Buyer's Price transactions, which have a high average LTV. There was no increase in the payment-to-income (PTI) ratio, despite the increase in loans, due partly to the drop in the interest rate, the lengthening of the term to maturity, and the increase in the average wage in the economy.

The credit card companies increased their share of the credit market after separating from the banks.

The increase in consumer credit from nonbank credit providers is partly due to the increase in credit from credit card companies. After some of them were separated from the banks, it is likely that they are working to increase their market share. Additionally, the interest rate on consumer credit from credit card companies rose in 2019, which can indicate that there is an increase in the financing cost as a result of the separation from the banks, an increase in demand by households for this type of credit, or an increase in its inherent risk as a result of years of high growth in consumer credit, primarily from nonbank sources.[10] The increase in risk may also be evidence of increased access to credit for population groups that could not obtain credit in the past. The high rate of growth in consumer credit from institutional investors has

[10] We do not possess official data in order to reliably determine the effect of the increase in risk on the average interest rate. For further details, see the explanations appearing in Appendix I and II of the second report of the Committee to Examine Competition in the Credit Market.

been maintained for a number of years. The increase in activity of nonbank financial institutions (local credit providers who are not banks or institutional investors) since 2015—as a result of regulation that allowed them to issue bonds in order to finance their activity since becoming subject to supervision—has also led to an increase in consumer credit, a development that is described in Box 1 of the Financial Stability Report for the second half of 2017.

The standstill in consumer credit provided by the banks during the past two years was accompanied by a drop in the bank interest rate on credit to this segment (Figure 4.3). The drop in the interest rate may indicate a decline in the demand for credit, but also may reflect credit rationing and shifting to less risky customers. The increase in housing debt may be a background factor explaining the drop in consumer credit. This assumes substitution between the two types of credit and that the separation between housing debt and consumer debt is arbitrary. If so, households prefer to take on housing debt, which is cheaper when collateral is put down, but are dependent on its supply. More lenient provision of bank credit for housing may therefore explain the lack of growth in consumer credit from the banks.

Bank credit to consumers remained unchanged over the past two years, accompanied by a decline in interest rates.

b. Developments in business debt in 2019

The growth rate of business debt was slightly lower than the GDP growth rate, in view of the high level of economic activity. (For further details, see Chapter 2). Total business sector debt grew this year by 3.7 percent, to NIS 958 billion (Table 4.2).

The growth rate of business debt was slightly lower than that of GDP.

Table 4.2
Distribution of Nonfinancial Business Sector Debt[a], 2016 to 2019

	End-of-period balance (NIS billion)				Rate of change from previous period (percent)[b]			
	2016	2017	2018	2019	2016	2017	2018	2019
Business sector debt	**850**	**862**	**924**	**958**	**5.3**	**1.4**	**7.1**	**3.7**
Debt to the banks[c]	**398**	**412**	**438**	**458**	**1.8**	**3.6**	**6.5**	**4.5**
Domestic nonbank debt	**273**	**295**	**313**	**322**	**11.1**	**8.3**	**5.8**	**3.0**
of which : Tradable bonds in Israel	173	190	204	205	12.9	9.6	7.7	**0.1**
Nontradable bonds in Israel and nonbank loans[d]	100	106	108	117	8.2	6.1	2.3	**8.5**
Loans from institutional investors	69	76	78	87	18.6	10.8	2.6	**11.2**
Debt raised abroad[e]	**180**	**155**	**173**	**178**	**5.1**	**-13.9**	**11.5**	**3.0**

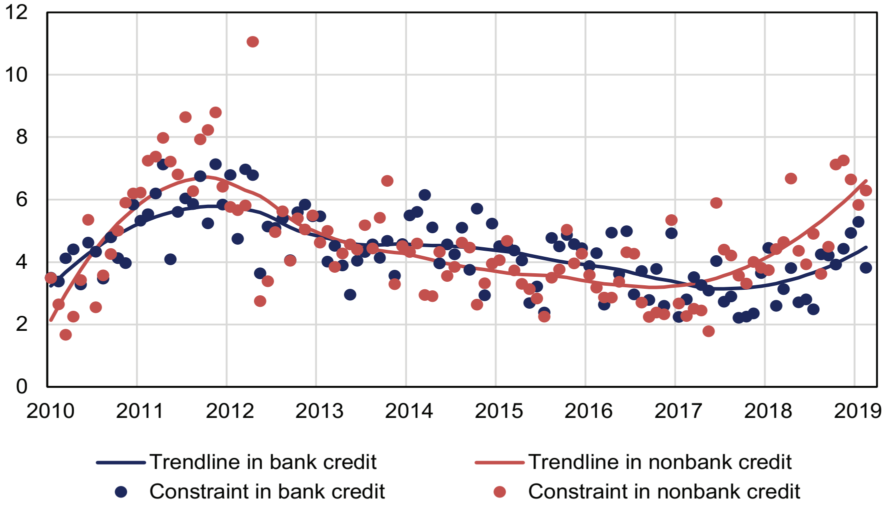
[a] Excluding the banks, insurance companies, and credit card companies. Loans from the banks are presented before loan loss provisions (based on unconsolidated data, Israelis only). Outstanding bonds are presented by adjusted par value (capital registered for trading plus indexation and interest differentials that have not yet been paid).
[b] In the current year, the change is from the start of the year.
[c] Debt to banks includes only bank loans. Data on debt to banks are based on monthly balance-sheet data and not on annual balance-sheet data, since the statements for 2019 have not yet been published.
[d] Nontradable bonds in Israel, loans from institutional investors, loans from credit card companies that are not backed by the banks, and earmarked credit from the government. Credit card company data are as of September 2019, since the annual financial statements for 2019 have not yet been published.
[e] Including holdings of Israeli companies' bonds abroad, and loans from abroad. The reported balance of credit from nonresidents to the business sector is based on reports from firms in the Israeli economy.
SOURCE: Bank of Israel.

Business sector debt[11] is divided into 48 percent bank debt, 34 percent domestic nonbank debt and 19 percent debt to abroad. The growth rate this year was lower than in 2018, as a result of the low rate of increase in the balance of tradable bonds (0.4 percent), and the drop in the growth rate of debt raised abroad, in view of the debt revaluation due to the appreciation of the shekel (3 percent). If the effect of the exchange rate is neutralized, debt to abroad rose at a high rate (19.7 percent). The growth rate of bank debt was slightly lower than in the preceding year but higher than in 2016 and 2017 (4.5 percent).

The balance of tradable debt remained almost unchanged this year.

The growth of domestic nonbank credit was slower this year than in previous years, despite the rapid increase in loans from institutional investors and in the balance of nontradable bonds. This was because the balance of tradable debt remained almost unchanged this year. The drop in the rate of bond issues is part of the long-term trend in which investment by institutional investors is shifting to direct loans to the business sector and to foreign customers.[12] Together with the drop in issues of tradable bonds, large companies found it increasingly difficult this year to obtain nonbank credit, despite the historically low level and even narrowing of spreads on tradable corporate bonds (Figure 4.4). Nonetheless, there was an increase this year in the utilization of credit lines provided by the banks and in the issue of short-term nontradable bonds (commercial securities).

Figure 4.4
Rate of Large Companies Reporting a Serious Credit Constraint, 2011–19
(seasonally adjusted monthly data from the Business Tendency Survey, percent)



The trend line is according to the Loess method with a smoothing coefficient of Alpha 0.5. The text of the questionnaire was changed in 2013, and the coefficient was changed at the end of 2015, but it does not seem that the changes led to a break in the series.
SOURCE: Based on the Business Tendency Survey.

[11] For further details on the characteristics of issues and debt, see Bank of Israel, Financial Stability Report for 2019.
[12] For further details on the investments of financial institutions, see Chapter 4 of the Bank of Israel Annual Report for 2019.

The volume of activity among nonbank financial institutions to the business sector is still modest, but it has grown in recent years. Here we would only mention that despite the overall decline in business sector bonds, the issuance of bonds by the financial services industry (which includes nonbank financial institutions and credit card companies) totaled NIS 4 billion in 2019, which comprises 10 percent of the total debt raised by the business sector—a one percentage point increase over 2018.

The growth in bank credit to the business sector, including that to the construction industry, was slightly slower than in the previous year.

The growth in business sector debt to the banks was slightly slower than the preceding year (4.5 percent in September 2019 relative to 6.5 percent in 2018). The growth in credit to the construction industry continued this year, but at a lower rate than in the preceding year. Bank credit to the construction industry grew in the third quarter of 2019 by about 8 percent[13], compared 14 percent in 2018 and 21 percent in 2017. The background to the increase in credit to the construction industry includes the loosening of restrictions on bank exposure to this industry that were in place since 2016[14], and the high level of activity in the real estate market (for further details, see Chapter 8). Apart from these, a further leniency was granted to the banks in January 2020, which allows them to expand the provision of credit for the construction of infrastructure by 4 percent of their credit portfolio (about NIS 18 billion), or to release the current exposure to infrastructure construction from the general limitation on the construction industry (about NIS 5 billion).

Starting in 2018, the trend reversed: The growth rate of bank credit to large businesses increased, and that of bank credit to small and midsize businesses declined.

Beginning in 2018, in view of the easing of regulatory restrictions on the construction industry and the fulfillment of regulatory capital ratio requirements—which make it easier for the banks to expand credit to large businesses, a segment in which the capital requirements are more stringent than in the case of small and midsize businesses—the trend has reversed. The growth rate of bank credit to large businesses, which was slow during the previous period, increased, in contrast to the drop in the growth rate of bank credit to small and midsize businesses. During the first three quarters of the year, growth in bank credit to large businesses continued at a high rate (9.7 percent[15]), which was similar to the increase in the previous year (9.3 percent). This was accompanied by a more moderate increase in credit to small and midsize businesses—3.3 percent in contrast to 7.2 percent in the previous year. The increase in the quantity of bank credit to large businesses was accompanied by a drop in the interest rate on this type of credit, in contrast to the lack of change in the interest rate on credit to small and midsize businesses. The increase in the supply of bank credit to large businesses and continued growth in bank credit for housing reduce

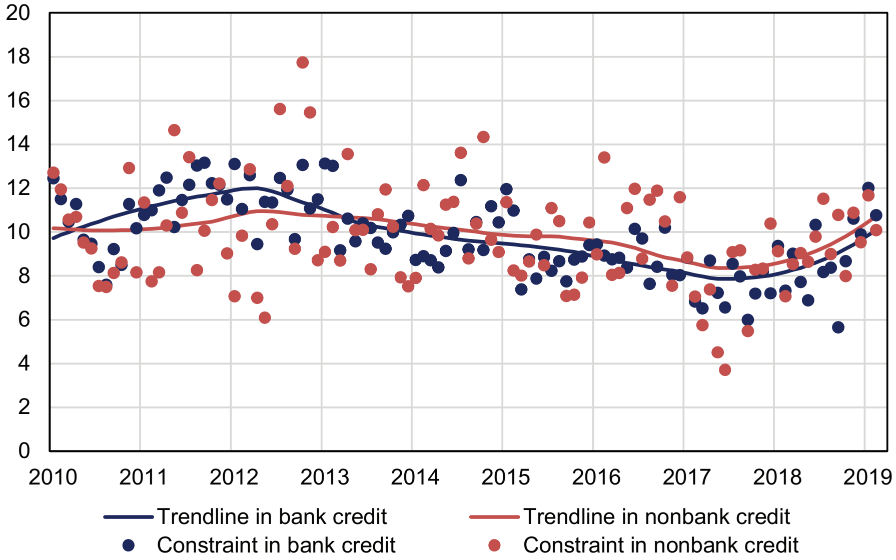
[13] In comparison to the end of 2018 and the end of the third quarter of 2018.

[14] For further details, see Chapter 4 of the Bank of Israel *Annual Report* for 2018 and the *Financial Stability Report* for the first half of 2019.

[15] The data on bank activity according to segment are in terms of credit and differ from the debt data presented in this chapter. The data on activity segments are based on consolidated data (debt data taken from the banks' unconsolidated reports) minus loan loss provisions and loans to abroad and minus the figures for specific credit card companies that were separated from the banks in previous years. In addition, since the data are taken from the companies' financial statements, they are updated only up to the third quarter of 2019. For further details on the data, see Bank of Israel, *Israel's Banking System* for the first half of 2019.

the supply of bank credit available to small and midsize businesses. Indeed during the past two years the number of small and midsize businesses reporting difficulty in obtaining bank credit has increased, although at a moderate rate (Figure 4.5).

Figure 4.5
Rate of Small Companies Reporting a Serious Credit Constraint, 2011–19
(seasonally adjusted monthly data from the Business Tendency Survey, percent)



The trend line is according to the Loess method with a smoothing coefficient of Alpha 0.5. The text of the questionnaire was changed in 2013, and the coefficient was changed at the end of 2015, but it does not seem that the changes led to a break in the series.
SOURCE: Based on the Business Tendency Survey.

The supply of credit from institutional investors is capturing a significant and growing share of total credit in the economy. However, it is not being provided to small and midsize businesses. The institutional investors are providing credit directly (in the form of bonds and loans) almost exclusively to large companies. (For further details, see Chapter 4 of the Bank of Israel Annual Report for 2018, which presents an analysis of the trends in debt to institutional investors relative to debt to the banks, and shows the tendency of institutional investors to provide credit to large businesses.) Moreover, the quantity of credit from nonbank financial institutions, which provide a large share of their credit to small and midsize businesses, is low in Israel. In addition, there are still barriers[16] that limit their ability to expand credit to these businesses, particularly barriers that are related to the ability to impose liens.[17] There are also limits on direct investments by institutional investors in nonbank financial institutions, the reduction of which will allow the latter to expand their activity. One constraint is due to institutional investors' hesitation to invest in a young and unrated market in which the level of risk is unknown. A second is the result of the regulatory limit on the direct expenditures of institutional investors, which makes it difficult for them to invest directly[18] (by means other than bonds) in nonbank financial institutions. A developed securitization market, which would result from the enactment of the securitization law[19], could expand the credit that nonbank financial institutions and banks provide to small and midsize businesses, by freeing up assets from their balance sheets—in which they have an underwriting and operational advantage (credit to households and to small and midsize businesses)—and selling them to institutional investors. It should be mentioned that the government is also acting to make institutional investors' funds more accessible for financing credit from nonbank financial institutions to small and midsize businesses. This will be accomplished through the creation of designated investment funds for providing credit to such businesses and grants to nonbank financial institutions.[20]

The enactment of the securitization law and expanded access to nonbank financial institutions for small and midsize businesses can lead to the expansion of credit supply to these businesses.

3. LONG-TERM TRENDS IN PRIVATE DEBT

The private debt to GDP ratio in Israel is low relative to other countries, and has remained relatively unchanged in recent years.

The private debt to GDP ratio in Israel is low relative to other countries (in 2019 the gap was 46 percentage points), and in recent years it has remained relatively unchanged (Figure 4.6). The historic gap in private debt between Israel and other countries is the result of the low level of household debt, while the widening of the

[16] The size of a loan that a nonbank financial institution can provide to a single borrower using the funds of an institutional investor was restricted to NIS 1 million. Beyond that, it requires the approval of the institutional investor's board of directors. In 2019, that restriction was brought into line with the restriction on cooperation between an institutional investor and a bank (NIS 5 million).

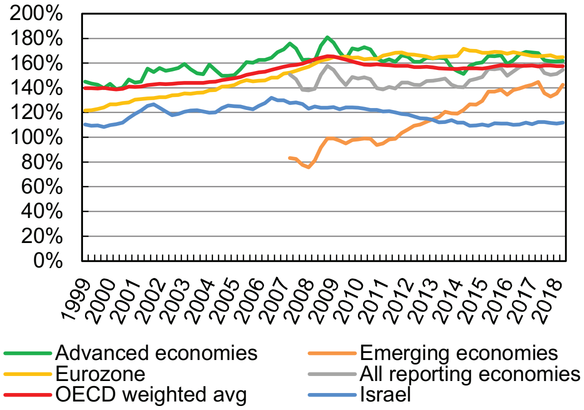
[17] The banks tend to provide loans with a general current lien, which does not make it possible for other loan providers (not even secondary ones) to obtain liens without the explicit approval of the bank, and may limit the ability of nonbank entities to provide loans.

[18] Expenditure that is reflected in lower returns rather than in the management fees charged by the institutional investor, which are limited to 0.25 percent of total managed assets.

[19] A negative correlation has been found in the literature between securitization and economic growth, even during the period that preceded the economic crisis. This is explained by the fact that most of the securitization worldwide is carried out on household credit, and the expansion of this type of debt harms economic growth. In contrast, a positive though weak link has been found between securitization of business loans and economic growth. A.C. Bertay, D. Gong, and W. Wagner (2017). "Securitization and Economic Activity: The Credit Composition Channel", *Journal of Financial Stability*, 28: 225–239.

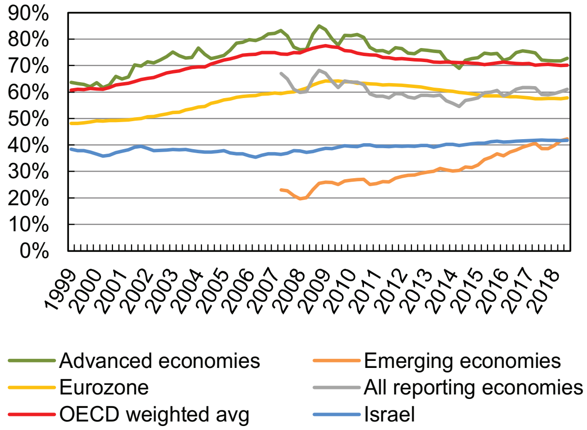
[20] The first tool consists of two designated investment funds for loans to small and midsize businesses, which were created in 2016. The government provides 25 percent of the total investment in these funds and has the status of a subordinate investor, thus raising the return for financial investors and reducing their losses. A second tool (which was announced in 2018) is a grant to nonbank financial institutions that provide NIS 500 million in credit to small and midsize businesses. Currently, one company is eligible for a grant, which can be up to NIS 26 million. For further details, see Chapter 4 of the Bank of Israel *Annual Report* for 2018.

Figure 4.6
Private Sector Debt (Households and Businesses) as a Share of GDP, International Comparison, 1999–2019



[a] The weighted average of the OECD countries by the countries' GDP. Comparison to the weighted average makes it possible to see the ratio of debt to total economic activity.
[b] Advanced economies: US, UK, eurozone, Denmark, Japan, Norway, New Zealand, Canada, Sweden, and Switzerland.
[c] Emerging economies: Indonesia, Argentina, Braziel, South Africa, India, Hong Kong, Hungary, Turkey, Israel, Malaysia, Mexico, China, Singapore, Saudi Arabia, Poland, Czech Republic, Chile, Colombia, South Korea, Russia, and Thailand.
[d] Entire sample: The 40 countries that report to the BIS.
SOURCE: Based on BIS.

Figure 4.7
Household Debt (Housing and Nonhousing) as a Share of GDP, International Comparison, 1999–2019



[a] The weighted average of the OECD countries by the countries' GDP. Comparison to the weighted average makes it possible to see the ratio of debt to total economic activity.
[b] Advanced economies: US, UK, eurozone, Denmark, Japan, Norway, New Zealand, Canada, Sweden, and Switzerland.
[c] Emerging economies: Indonesia, Argentina, Braziel, South Africa, India, Hong Kong, Hungary, Turkey, Israel, Malaysia, Mexico, China, Singapore, Saudi Arabia, Poland, Czech Republic, Chile, Colombia, South Korea, Russia, and Thailand.
[d] Entire sample: The 40 countries that report to the BIS.
SOURCE: Based on BIS.

gap between 2008 and 2015 was due to the decrease in business debt. The following sections analyze the historically low level of household debt and the main reasons for the drop in the business debt to GDP ratio from 2008 to 2015.

The historical gap in the private debt to GDP ratio between Israel and other countries is largely due to the low rate of household debt relative to GDP.

a. Long-term trends in household debt

The household debt to GDP ratio in Israel has increased slowly in recent years despite the high rates of growth in household debt. This ratio is significantly lower than in other countries and explains more than half of the difference between Israel and other countries in the private debt to GDP ratio (28 percentage points out of 46; Figure 4.7). The gap is primarily the result of the ratio of housing debt to GDP, which was 27 percent in Israel in 2017, compared with an average of 50 percent in the OECD countries. The ratio of nonhousing debt to GDP in Israel was 15 percent in that year, compared with an average of about 20 percent in the OECD countries.[21]

The average LTV ratio in selected European countries is about 40 percent higher than in Israel.

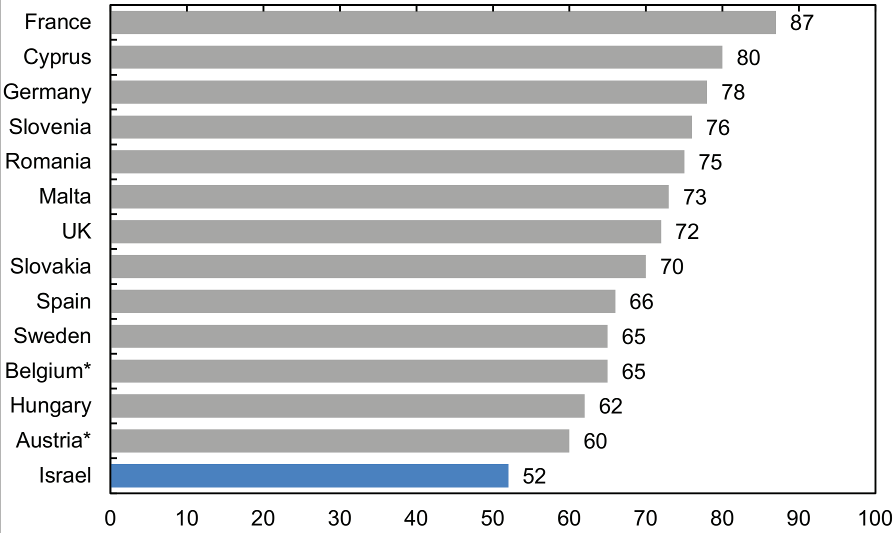
One of the reasons for the low housing debt to GDP ratio in Israel relative to other countries is the low level of mortgage leverage. The average LTV ratio in selected

[21] The average housing debt to GDP ratio in the OECD countries is taken from OECD data. The average ratio of total household debt to GDP is taken from BIS data. The ratio of nonhousing debt to GDP was calculated as the complement of the gap between the two figures.

European countries is about 40 percent higher than in Israel (Figure 4.8). The possible explanations for the remainder of the gap between Israel and other countries include low home values, which lead to smaller mortgages, a small number of real estate transactions, structural failures[22], and a low level of government support for home buyers in Israel relative to other countries.[23]

The aforementioned gap was among the considerations behind the regulatory decision made in March 2018 regarding the loosening of the LTV limit on mortgages for households. Nonetheless, it is important to mention that regulatory changes have a gradual effect, which makes it necessary to analyze all of the implications of the

Figure 4.8
Average Loan-to-Value (LTV) Ratio, Israel and Selected European Countries, 2018 (percent)



* The figure is for 2014.
Israeli data are end-of-year data.
SOURCE: European Mortgage Federation and Bank of Israel.

policy measure on households, including its effect on home prices, which during the last year started to rise again (see Chapter 8).

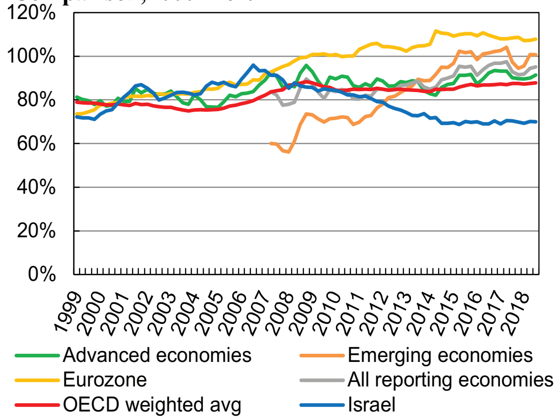
The widening of the gap between Israel's private debt to GDP ratio and that of other countries between 2008 and 2015 was due to the decline in business debt.

[22] For example, difficulty in using the assets as collateral. For further details, see the box on "Analysis of the Mortgage Market for Borrowers in the Arab Sector in view of Structural Failures in Housing in that Sector", in *Israel's Banking System* for 2017.

[23] The low level of household debt in Israel is also reflected in the household equity ratio (financial assets less debt), which is high by international comparison. For further details, see Bank of Israel, *Financial Stability Report* for the first half of 2019.

b. Long-term trends in business debt: the decline in business debt relative to GDP

Figure 4.9
Business Sector Debt (Excl. Banks and Insurance Companies) as a Share of GDP, International Comparison, 1999–2019



[a] The weighted average of the OECD countries by the countries' GDP. Comparison to the weighted average makes it possible to see the ratio of debt to total economic activity.
[b] Advanced economies: US, UK, eurozone, Denmark, Japan, Norway, New Zealand, Canada, Sweden, and Switzerland.
[c] Emerging economies: Indonesia, Argentina, Braziel, South Africa, India, Hong Kong, Hungary, Turkey, Israel, Malaysia, Mexico, China, Singapore, Saudi Arabia, Poland, Czech Republic, Chile, Colombia, South Korea, Russia, and Thailand.
[d] Entire sample: The 40 countries that report to the BIS.
SOURCE: Based on BIS.

The business debt to GDP ratio in Israel fell by 20 percentage points, from a level of about 90 percent of GDP in 2008 to 70 percent in 2015, and during the past five years it has remained relatively stable. In contrast to the fall in Israel's business debt to GDP ratio, the ratio has risen in many countries, opening a gap between Israel and other countries that did not exist prior to 2007 (Figure 4.9). The fall in the business debt to GDP ratio can make either a positive or negative contribution to growth, depending on the characteristics of the debt and of the economy. The increase in the ratio in many countries is accompanied by an increase in the level of risk and a decline in the quality of credit, and leads to concern about a negative effect on growth in the long term.[24] Below, we investigate the reasons for the fall in the business debt to GDP ratio in Israel, while differentiating between structural changes that affect companies' demand for credit and changes that affect the supply of credit. Following that, we will determine whether the long-term trends that led to a drop in the ratio still exist and whether the constraints on the supply of credit side are contributing to the downward trend.

1. Reasons for the decline in business debt: Structural changes in the business sector in Israel

The increase in the weight of the services sector, which includes companies that do not require much credit, reduces the demand for credit.

The industrial structure of companies in Israel

The industrial structure of the business sector in Israel has changed in recent years as the share of companies that are not in need of large amounts of credit has risen. This development reflects the increasing importance of the services sector in the Israeli economy at the expense of the goods sector. The business services sector accounted

[24] The IMF's *Financial Stability Report* in recent years has indicated a drop in collateral and in bond ratings. It has also shown that companies are using debt for share buybacks rather than investment purposes.

for 69 percent of business output in 2019, an increase of five percentage points since 2008.[25] The services sector is characterized by a lower rate of leverage than the goods sector. In the third quarter of 2019, the ratio of the business services sector's debt to business output was 76 percent lower than the goods sector's ratio. The change that has taken place since 2008 in the composition of business activity, i.e. a shift from goods to services, is therefore leading to a drop in the debt-to-GDP ratio, which is estimated at about 4 percentage points.[26]

The activity of hi-tech companies that finance their activity with equity rather than debt has increased.

Within the services sector, the main change is the growth in activity of the hi-tech sector, particularly the information and communications industry, which is the industry representing most hi-tech companies in Israel. The information and communications industry's share of business sector output increased by 3 percentage points from 2010[27] to 2019 and now stands at 14 percent. This apparently led to a decline in the business debt to GDP ratio, since hi-tech companies finance their activity by means of equity and tend not to take on debt. (For further details, see *Selected Studies on Financing Hi-Tech Companies*, Bank of Israel, 2020.) The value of venture capital raised by hi-tech companies in Israel rose from NIS 9 billion in 2007 (1.3 percent of GDP, which was the peak prior to the economic crisis) to about NIS 26 billion (about 2 percent of GDP) in 2019. During this period, the activity of multinational hi-tech companies' R&D centers also expanded, which contributed to GDP but was financed from foreign sources that are not included in business debt.[28] According to Central Bureau of Statistics data for 2017, the financing (expense) of the multinational R&D centers was about NIS 28 billion, which comprises 46 percent of total business sector expenditure on R&D. The increase in financing by about NIS 13 billion since 2007 is equal to about 1 percent of GDP (for further details on the activity of these companies in 2019, see Chapter 2).

There was also an increase in the share of activity within the services sector by other industries, which are characterized by low levels of leverage. In particular, starting in 2008 the trade and services industry's share of GDP rose by one percentage point. An analysis based on estimating the debt level among public companies shows that companies in the trade and services industry have a low level of debt relative to other industries (Table 4.2 in the Bank of Israel Annual Report for 2018).[29]

[25] Chapter 2 of the Bank of Israel *Annual Report* for 2017 presents a discussion of the high share of services in Israel's total exports relative to other countries.

[26] The product of the increase in the weight of the business services sector (5 percentage points) and the difference between debt to output ratios of the business services sector and the goods sector (76 percent).

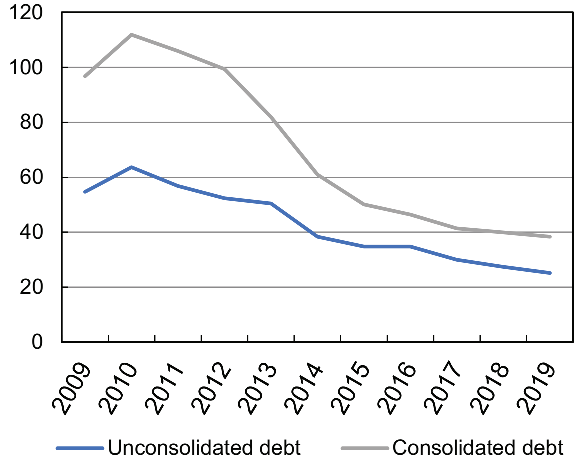
[27] The industry's share fell temporarily following the 2008 crisis, and resumed its increase in 2010.

[28] Publication of the Central Bureau of Statistics: *R&D in Hi-Tech Companies and the Development Centers of Multinational Companies*, 2017 [Hebrew]. The data show that 99 percent of the financing of R&D centers is from the internal sources of the parent company.

[29] Table 4.2 in Chapter 4 of the Bank of Israel *Annual Report* for 2018 shows that the level of debt of public companies in the trade and services industry is about NIS 680 thousand lower on average than among companies in the manufacturing and agriculture industries. The regression included controls for the effect of the year and of specific companies.

The number of public holding companies has declined.

Figure 4.10
Financial Debt[a] of Holding Companies, 1999–2019
(financial statement data, NIS billion)



[a] Financial debt includes debt to banks, nontradable debt, and bonds.

SOURCE: Based on financial statements of public companies.

The corporate structure of companies in Israel

The financial difficulties encountered by many public holding companies as a result of the Global Financial Crisis in 2008, the "Concentration Law" taking effect in 2013[30], and the contraction in the supply of credit following these processes led to a drop in the number of public holding companies. Holding companies are companies with a controlling shareholder, which allow the controlling shareholder to raise debt from the public and to carry out leveraged acquisitions of other companies.

The total debt of companies in this category has declined substantially, primarily between 2010 and 2015[31], which were peak years with respect to the number of companies in this industry that carried out debt restructuring (Figure 4.10). Between 2009 and 2019, the direct debt of holding companies (unconsolidated debt) dropped by about NIS 29 billion (about 2.5 percent of GDP in 2015 terms), while the consolidated debt of the holding companies, which includes the debt of subsidiaries and sister companies[32], declined by double that amount—about NIS 62 billion. The reason for the decline in the debt of holding companies was the disappearance of more than 50 percent of such companies: from 92 in 2009 to 43 in 2019. The decline in the consolidated debt of the holding companies reflects, at least in part, a genuine decline of total debt in the economy, rather than only a technical decline following the separation of the consolidated companies from the holding companies that controlled them. Between 2012 and 2015, the growth rate of total debt of public companies in the business sector (excluding banks and insurance companies) declined, as did the average leverage of these companies (from 66 percent in 2010 to 63 percent in 2015). An analysis of the individual companies in the trade and services and manufacturing industries, whose unconsolidated debt fell significantly in 2012–13, shows that 4 out of the 10 companies that showed the largest decline[33] are the subsidiaries or sister companies of holding companies that wrote off debt.

Regulatory restrictions that shifted bank credit from large businesses to households and small and midsize businesses went into effect in 2010.

In sum, the changes in the industrial and corporate structure of the economy apparently contributed to a drop in the demand for debt starting in 2008, and particularly between 2010 and 2015.

2. Reasons for the decline in business debt: The supply of credit providers

This section describes the main changes that influenced the supply of credit since 2008. It also discusses the changes in trends that are expected to have a continuing

[30] The "Concentration Law" requires companies to reduce the layers in their corporate structure to a maximum of two and to separate between ownership of nonfinancial companies and that of a major financial company. The law required that all of the separations should take place by the end of 2019.

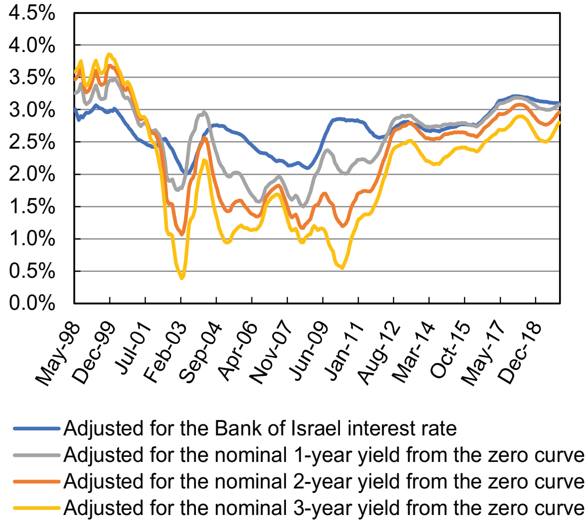
[31] Ana Sasi-Brodesky (2017). "Recovery Rates in the Israeli Corporate Bond Market 2008–2015", Discussion Paper Series 2017.07, Bank of Israel Research Department.

[32] Data from the report on the liabilities of public companies, which have been gathered since 2009. Between 2009 and 19, the unconsolidated debt of the holding companies fell by about NIS 30 billion while the debt of the consolidated companies fell by NIS 58 billion.

[33] The total value of debt write-offs among these four companies was NIS 30 billion between 2015 and 2020.

effect on the supply of credit in the near future. The decline in the business debt to GDP ratio included an 18 percentage point drop in bank credit, a 3 percentage point drop in credit from institutional investors and bonds, and a 5 percentage point drop… in credit from abroad.

Figure 4.11
Estimated Effective Cost of Credit to the Business Sector, 1998–2019 (moving yearly average)



SOURCE: Bank of Israel.

Supply of bank credit

The ratio of business credit from the banks to GDP fell from 51 percent in 2008 to 33 percent in 2016 and since then has remained stable. In 2010, regulatory restrictions went into effect as part of the implementation of Basel II and Basel III regulations, which led to an increase in capital requirements and a change in risk weights. This in turn led the banks to prefer lending to the retail segments—households and small and midsize businesses—whose credit requires less equity to be kept in reserve than in the case of credit to large businesses.[34] The restrictions on exposure to a single borrower and the industry-specific restrictions on the construction and real estate industry led to a constraint on the banks' ability to expand credit to large businesses and holding companies. Unlike credit to large companies, the growth rate of credit to small and midsize businesses is based on a large number of transactions and is therefore accompanied by high operational costs, which hinders rapid expansion. This is apparently one of the reasons that the shift of bank credit to small and midsize businesses is accompanied by a reduction in its quantity.

[34] For further details on the regulatory changes, see the Banking Supervision Department's survey of Israel's banking system for various years.

The shift to housing credit occurred in parallel with an increase in activity in the real estate market, since, starting in 2010 (and in particular after 2012) and following the implementation of Basel II, the banks were required to hold less capital in reserve against the provision of mortgages, mainly mortgages with a low LTV. In 2018, there was an additional loosening of capital requirements for housing credit, which reduces the capital to be held in reserve and thus supports its continued growth.[35] Between 2008 and 2019, bank credit to households rose by about NIS 300 billion, and the cumulative rate of increase in total credit to households reached 235 percent.[36] In contrast, bank credit to the business sector rose during the past decade by only NIS 90 billion and the cumulative rate of growth of business credit was 25 percent.

It appears that the structural changes that led to a decrease in the supply of credit to large companies have been exhausted, and during the last two years the growth of that supply has resumed.

The background to the shift of credit to small and midsize businesses involves the aforementioned regulatory restrictions, and also the competition in credit to large businesses from institutional investors. As in the case of mortgages, the required capital reserve in respect of credit provided to small and midsize businesses is less than in the case of large businesses. Between 2011 and 2015, the debt of large businesses to the five largest banks fell by 18 percent, in contrast to an increase of 16 percent in the debt of midsized businesses and an increase of 42 percent in the debt of small businesses.[37]

According to the trend described above, estimates of the banks' effective cost in providing credit to the business sector rose between 2009 and 2018, evidence of the drop in the supply of credit and/or its shift toward

Figure 4.12
Average Spread on Business Sector Bonds (Excl. Financial Sector), 2010–19 (percent)

Tradable CPI-indexed, fixed-interest bonds only, with a term to maturity of more than half a year.

SOURCE: Bank of Israel.

[35] The loosening of the Banking Supervision Department's capital requirements for mortgages with a high LTV (60–75 percent) went into effect in March 2018. For further details on the change and its effect on the debt's characteristics, see Chapter 4 of the Bank of Israel *Annual Report* for 2018.

[36] Not all of the increase in bank credit is translated into an increase in the housing debt to GDP ratio, since the increase in bank credit was accompanied by a concurrent decline in credit provided by the government to households.

[37] The data for the banks' segments of activity differ from the debt definitions (see footnote 17). In reporting historical data for 2011–15, the definitions vary from bank to bank, such that each bank defines each segment of activity differently. In 2016, the definition of sectors was made uniform, and there is a resulting break in the data.

small and midsize businesses (Figure 4.11).[38] The trend of shifting credit toward small and midsize businesses reversed in 2018, as described earlier in the chapter, in view of the loosening of industry restrictions on the real estate industry and the attainment of the regulatory capital reserve targets.[39]

Despite the decline in the debt-to-GDP ratio between 2008 and 2015, companies (with the exception of holding companies) have not experienced difficulties in obtaining credit.

The supply of credit from institutional investors

In 2007, prior to the financial crisis, the ratio of credit from institutional investors to GDP stood at 27 percent. It subsequently declined, and between 2009 and 2015, it remained stable at around 24 percent. In 2015, an upward trend began in this ratio, and by the end of 2019 it reached 29 percent, which exceeded the pre-crisis peak. Since 2008, the debt restructurings by holding companies, their damaged reputations, and public and regulatory pressure led to a reduction in the supply of credit provided by institutional investors to businesses, particularly tradable credit. The Hodek Committee and the Goldschmidt Committee recommended that the quality of the institutional investors' investments be increased, and this led to regulatory directives that went into effect in 2010. Corporate bond spreads, mainly those of holding companies, increased between 2010 and 2012, but have been in a continuous downward trend since 2016 (Figure 4.12). It therefore appears that the drop in the supply of credit from institutional investors has exhausted itself and in recent years (not including 2019) this type of credit has grown.

The decline in the ratio of business sector debt to GDP, together with the trends in the domestic supply of credit (from banks and institutional investors) between 2010 and 2015, are evidence of the shift of bank credit towards small and midsize businesses, which apparently led to a drop in the amount of bank credit to the business sector. In parallel, credit from institutional investors fell, which apparently mainly affected the holding companies. It appears that for the rest of the large companies in the economy, access to credit from the institutional investors did not decline significantly, and they continued to issue bonds. At the same time, there was a drop in the demand for credit in the economy, with an increase in the activity of companies in the services sector, particularly hi-tech companies. This development likely explains why the major decline in the business debt to GDP ratio was not accompanied by

[38] It should be kept in mind that these are "noisy" estimates based on the receipt of income and on the existing stock. Therefore, the estimate is expected to be influenced by economic cycles and to indicate a drop in the spread during periods of economic downturn. However, since there have been no downturns in Israel since 2009, the increase in income during this period is an indication of an increase in the bank spread. The figure may also reflect a change in the composition of credit and a transition to the provision of credit to riskier businesses and at a higher rate of interest. Such a change is in line with the regulatory changes that helped to drive the shift of credit toward small and midsize businesses. The trend presented is also obtained when not using a moving average or when using a moving average of less than six months. It is also worth noting the decrease in spreads up until 2009, with the increase in the supply of competing credit from the financial institutions.

[39] In 2017, all of the banks attained the new regulatory capital requirement targets, and in 2016 the industry restriction on the construction and real estate industry was loosened. For a description of the regulations, see Chapter 4 in the Bank of Israel *Annual Report* for 2019 and the *Financial Stability Report* for the first half of 2019.

a decline in economic growth or in companies' ability to finance their activity. The increase in GDP and economic activity during these years (Chapter 2) supports this claim, as does the general downward trend in the financing difficulties of businesses in Israel from 2011 until 2018, following the increase in such difficulties among the largest companies during 2010–11, and in view of the change in corporate structure as described above (Figure 4.4 and Figure 4.5). There are also indications from previous surveys of the general downward trend in financing difficulties from 2003 until 2018.[40] This finding is reinforced by the relatively low value (9 out of 34) of the Doing Business index[41], which indicates that businesses in Israel find it easier to obtain financing than businesses in other OECD countries.

In conclusion, it appears that the downward trend in the ratio of business credit to GDP between 2008 and 2015 was the result of structural changes in the economy and regulatory processes, and apparently did not have any major adverse effect on economic growth. The structural changes, and primarily the growth of the hi-tech sector, are expected to continue to affect the business demand for debt in Israel in coming years. The process on the credit supply side has been exhausted, and during the last two years the trend in the supply of bank credit has reversed. Thus, it has again started to grow rapidly, and is biased toward large businesses.

[40] The Companies Survey (an old survey that was replaced in recent years by the Business Tendency Survey, although it provides a longer historical perspective) points to a decline in the difficulty experienced by businesses in obtaining financing from 2003 until 2018, other than a temporary increase in the year of the crisis. The downward trend continued even in periods when the interest rate was not lowered.

[41] The index is calculated by the World Bank as an estimate of the quality of the business environment.