CHAPTER 5

CHAPTER 5
RISKS

1. INTRODUCTION

The banking system is exposed to a wide range of risks that are typical of such systems, given the nature of a bank's operations. These include credit risk, market risk, liquidity risk, and operational risk. Other risks have intensified due to developments in the business, technological, and regulatory environments in Israel and worldwide. These include technological risk, cyber risk, conduct risk, climate risk, compliance risk, business model risk, and others. Beyond the microprudential risks that affect individual banks and arise from their specific activities and exposures, the banking system is also exposed to macroeconomic risks stemming from adverse events in the real economy and the capital markets. When macroeconomic risks materialize, the correlation between different types of risk increases, potentially increasing the vulnerability of the banking system.

The favorable macroeconomic environment and regulatory measures implemented over the past decade by the Banking Supervision Department have helped improve the resilience of the banking system and its ability to withstand shocks. These positive developments are reflected in improved capital quality and higher capital ratios relative to the past, a higher-quality credit portfolio with reduced concentration, and high liquidity. These factors have positioned the banks to handle the challenges posed by the Swords of Iron War, allowing them to absorb the expected losses and continue to provide credit. However, the war presents significant challenges to the banking system, including the intensification of geopolitical, financial, operational, technological and other risks.

Credit risk arises from the probability that a borrower or group of borrowers will fail to meet their obligations to the bank, resulting in nonpayment of the principal and/or interest, thereby eroding the bank's expected profits.

Market risk stems from unexpected changes in market prices—such as interest rates, price indices, exchange rates, share prices, etc.—that negatively impact the bank's income or equity value.[1] This is due to on- and off-balance sheet positions affected by changes in the fair value of financial instruments as a result of market conditions.[2]

Liquidity risk arises from uncertainty regarding unexpected withdrawals of deposits and unexpected demand for credit that the bank must provide immediately, which may prevent the bank from meeting its obligations to depositors.[3]

Operational risk[4] involves the loss or disruption of the bank's business continuity due to inadequacies or failures in internal processes, human resources, and various systems, or as a result of external events.

1 From David Ruthenberg, Bank Management in Israel – Management of Assets, Liabilities and Risk, Keter, Jerusalem, 2002. [Hebrew]
2 Section 2a of the Proper Conduct of Banking Business Directive no. 339 – Management of Market Risk.
3 Ibid
4 Section 5 of the Proper Conduct of Banking Business Directive no. 350 – Management of Operational Risk.

The risk level of the banking system's activities increased during 2023, as discussed below, due to high interest rates, market volatility in Israel and worldwide, legislative initiatives to reform the judicial system, and the outbreak of the Swords of Iron War in the last quarter of the year. The risk level remained high in the early months of 2024 due to the high uncertainty regarding the war's development and its effects on the economy.

As in previous years, the Banking Supervision Department conducted a survey among senior executives in Israel's banking system in 2023.[5] This survey is intended to help formulate a risk assessment of the economy by examining risk developments from the perspective of senior executives in the banks and credit card companies. Respondents were asked to indicate which of the risks that threaten their organization concern them the most, including the effect of the Swords of Iron War.

The survey results indicate an increase in the overall risk level, with cyber risk continuing to be the most concerning one in 2024 (Figure 5.1). Domestic political risk[6] and geopolitical risk were ranked as the most significant risks following cyber risk, which represents an increase in ranking relative to 2023. This increase is attributed to the Swords of Iron War, its economic impacts, and fears of the conflict spreading to other regions. Additionally, there are concerns about significant legislative changes that are being made without broad consensus, especially regarding legislation that will impose a special levy on the banking system.[7]

A sharp increase was noted in the perception of credit risk (for both business and consumer credit), since many households and businesses have been adversely affected by the war, and in particular their ability to meet loan repayment obligations. Assistance and relief measures, and especially deferral programs, have in fact increased the risk of the credit portfolio except for housing loans, where the banks' assistance measures provided sufficient support to meet customers' current needs. Most respondents indicated that the measures taken by the Bank of Israel during the war[8] contributed to stabilizing the markets and reducing uncertainty at the war's outset.

However, despite the significant impact of the war on the economy and on the banking system in particular, more than half of the respondents believe that the war is not expected to have a substantial long-term impact on the banking system. Respondents reported that the overall risk level is expected to moderate in the long term.

The survey analysis also indicates a decrease in the perception of reputational risk, likely due to the improvement in ways of managing this risk during the year. This follows an increase in this risk

5 Including the credit card companies.

6 Domestic political risk and business continuity risks did not appear in the 2023 survey.

7 In March 2024, the Knesset passed a proposed law to impose a special levy on the banking system. According to the legislation, the banks would pay the government an amount of up to NIS 2.5 billion in 2024 and again in 2025. For further details about this mechanism, see the Special Payment Law to Achieve the Budget Targets (Temporary Order – Swords of Iron) – 2024.

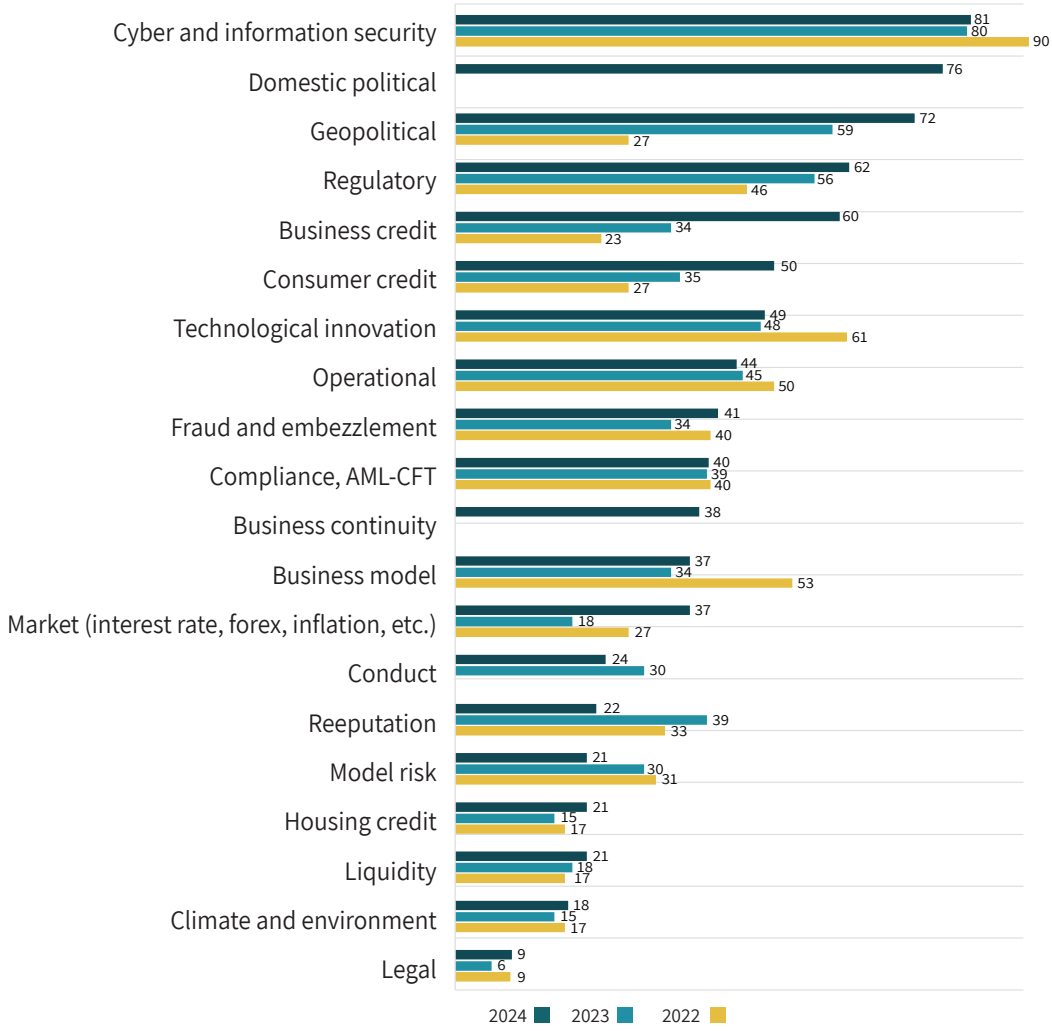
8 The activity of the Bank of Israel in the foreign exchange market – a program to sell foreign currency in the amount of $30 billion and a swap program in the amount of $15 billion. https://www.boi.org.il/en/communication-and-publications/press-releases/a09-10-23/, and a focused monetary program to ease credit terms for small and micro businesses that were adversely affected by the war https://www.boi.org.il/en/communication-and-publications/press-releases/a06-11-23/.

in recent years, which was partly due to the banks' increased profitability. Other risks that saw a perceived decline include model risk and conduct risk.

The Banking Supervision Department continues to monitor the full range of risks facing the banking system. It utilizes all available tools to ensure that these risks are managed properly, with the goal of maintaining a robust and stable banking system capable of facing any scenario in the present and future, in order to safeguard the public's deposits.

Cyber risk continued to be the most concerning risk, and local political risk and geopolitical risk were ranked right below it this year.

Figure 5.1 The Risks Faced by the Banking System - Comparison of the Past Three Years*



* In 2024, domestic political risk was separated from geopolitical risk for the first time, and technological innovation and business continuity were split into separate items.

SOURCE: Analysis of results of the Banking Supervision Department's 2024 risk survey of senior officials in the banking system and at the credit card companies.

2. CREDIT RISK

The credit portfolio – general

The banking system's credit portfolio grew by 6.6 percent during 2023, a lower growth rate than in previous years (12.3 percent in 2022), primarily due to the high interest rate environment and the Swords of Iron War that began in the last quarter of the year (Figure 5.2). The main source of the credit portfolio's growth was business credit, particularly in the large business segment. However, there was a slowdown in business credit in the second half of 2023, and a slight reduction in business credit excluding the construction and real estate industry in the last quarter of 2023 as a result of the war (Figure 5.3). In addition, 2023 saw a 1.4 percent reduction in consumer credit compared to 6.1 percent growth in 2022. The credit slowdown across all sectors began with the interest rate increases starting in April 2022, reflecting the increased cost of credit and the higher debt burden on borrowers.[9] This slowdown continued in the last quarter of the year due to the Swords of Iron War.

During 2023, there was an increase in the average interest rate in the unindexed shekel segment across all supervised activity segments, which constitutes the majority of nonhousing bank credit (Figure 5.4).[10] In the last quarter of 2023 and the beginning of 2024, there was a slight improvement in interest rates in some activity segments due to various assistance programs (for more details, see Box 6.2 and Chapter 3.1 in this survey) and a 0.25 percentage point reduction in the Bank of Israel's interest rate in January 2024. **Regarding the quality of the credit portfolio, credit risk increased during 2023, although the various assistance programs in the context of the Swords of Iron War may have somewhat mitigated the increase. In the early months of 2024, there was still high uncertainty, raising concerns about a continued rise in credit risk.** This increase is evident in the increased rate of problematic credit, especially credit in arrears for over 90 days, bringing the estimated proportion of NPL[11] (non-performing loans) within the public's total credit to a level similar to that observed in 2020 (the year of the COVID-19 crisis; Figure 5.5, Table 15). As macroeconomic conditions worsened and the quality of the credit portfolio deteriorated, there was an increase in the write-off rate and in provisions for credit losses (particularly in light of the Swords of Iron War), in order to ensure that these provisions would be sufficient to cover the estimated credit losses anticipated by the banking system (Figure 5.6). Consequently, there was an increase in the credit loss provisions rate, mainly due to a significant increase in collective provisions (as will be discussed below; Figure 5.7).

9 The increase in the debt burden brought about a slowdown in the growth of credit, due in part to the desire of households to reduce their liabilities by means of redemption (partial or full) of credit. For further details see Chapter 4 of the Bank of Israel Annual Report for 2023.

10 https://www.boi.org.il/publications/regularpublications/banking-system/27-12-23/ [Hebrew]

11 Non-Performing Loans – Up until the adoption of the CECL rules in 2022, impaired debts and debts in arrears of over 90 days were used in the calculation of NLP. With the adoption of the CECL rules, the estimate is made on the basis of debt that is not accruing interest or debts that are accruing interest but are in arrears of more than 90 days.

Growth rates were low this year, particularly in comparison to the last two years. The slowdown in the growth of credit was significantly more pronounced in the second half of the year.

Figure 5.2

Rate of Change in Outstanding Credit to Main Segments, Total Banking System, 2020–2023 (percent)

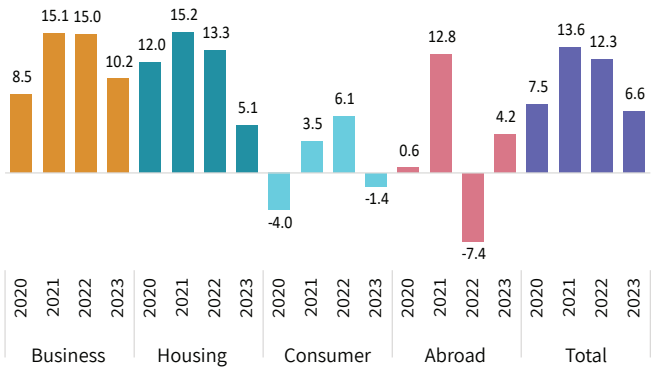
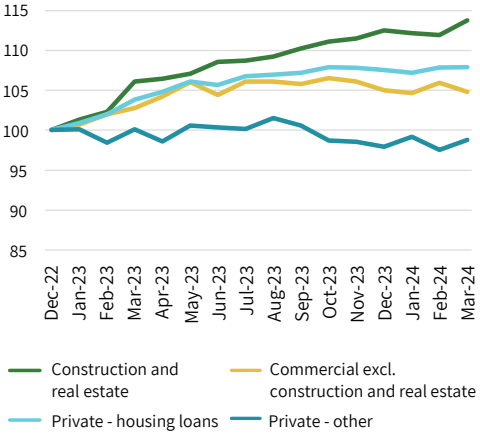


Figure 5.3

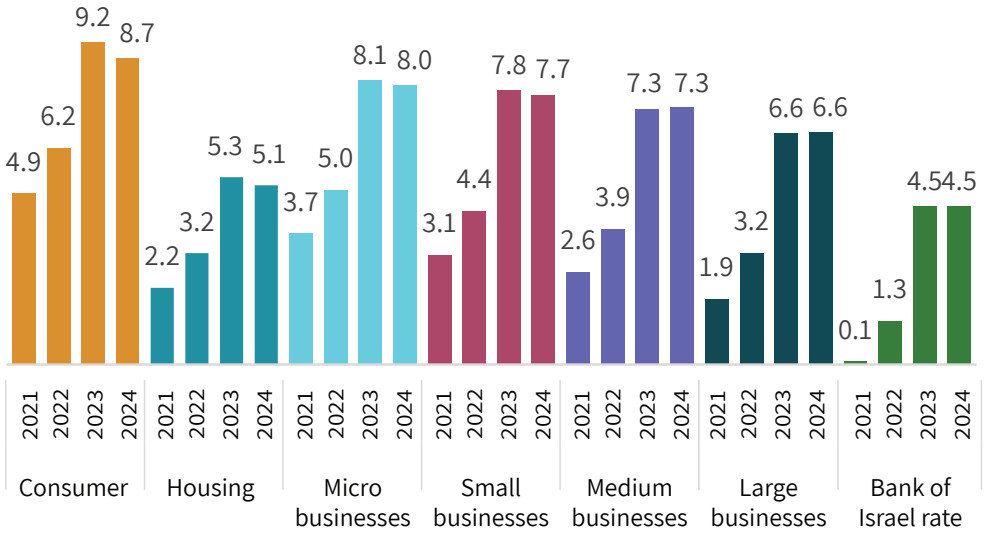
Development of Credit by Main Industries, Total Banking System, December 2022–March 2024 (index: December 2022=100)



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

There was an increase in the average interest rate in all activity segments this year.

Figure 5.4 Average Interest Rate on Unindexed Credit by Activity Segment vs. Bank of Israel Rate, Total Banking System, 2021–2024* (percent)



*2024 data are based on January–March data.

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

The estimated rate of NPL rose as a result of the deterioration in the quality of the credit portfolio together with the rate of the credit loss provision.

Figure 5.5

Noninterest-Bearing Credit or Credit More Than 90 Days in Arrears (estimated NPL) as a Share of Total Credit to the Public, Total Banking System, 2019–2023 (percent)

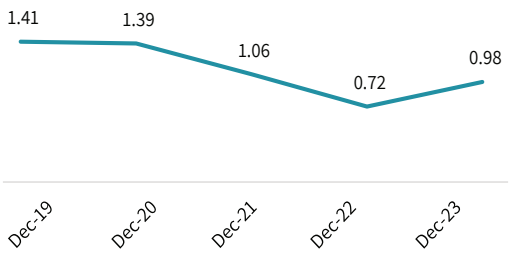
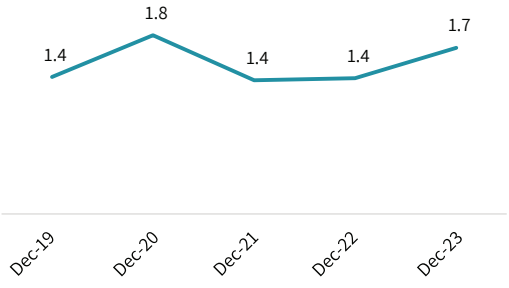


Figure 5.6

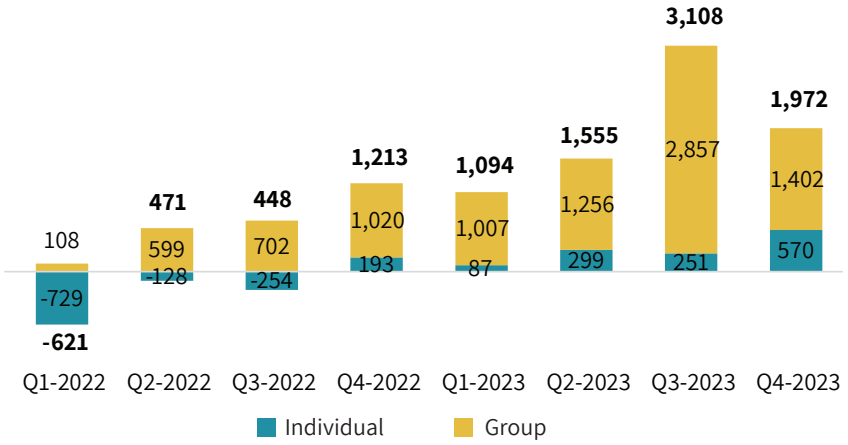
Credit Loss Allowances as a Share of Total Credit to the Public, Total Banking System, 2019–2023 (percent)



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

The banks increased the collective expense this year in view of the deterioration in the macroeconomic environment and the effects of the Swords of Iron War.

Figure 5.7 Group and Individual Loan Loss Provisions, the Five Banking Groups, 2022–2023 (NIS million)



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

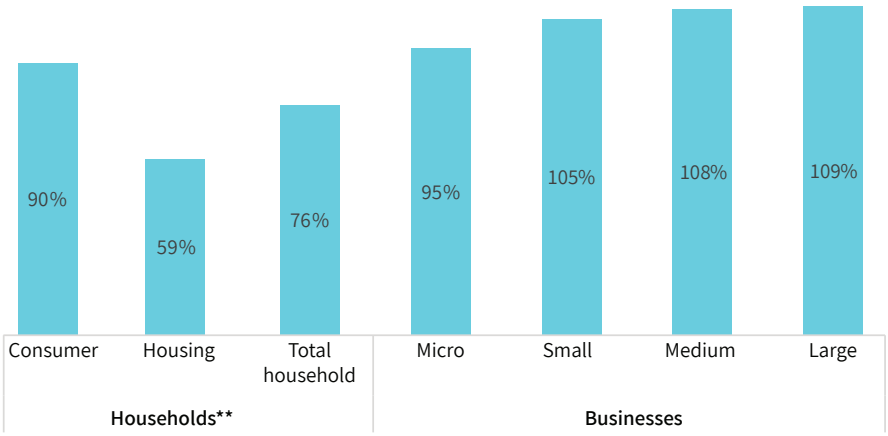
Credit Performance

Credit performance during 2023 increased by 22 percent relative to 2022.[12] However, there was variation in credit performance across different activity segments. In the business sector, performance increased by 23 percent (led by the large business sector), which is also evident in the continued growth in total business credit. However, household credit performance (excluding housing credit) saw a 12 percent decrease, accompanied by a 10 percent increase in redemptions (full or partial loan redemption), resulting in a reduction in total consumer credit (as described below).

The increase in the Bank of Israel interest rate during 2022–23 was transmitted to the business sector in a somewhat different manner. Thus, Figure 5.8 shows that the transmission rate to the interest rate in the business sector was higher than the transmission rate to the interest rate in the household sector. This is due to the difference in indexing: most consumer credit is in the unindexed shekel segment with a variable interest rate, as in the case of the business sector. However, in the case of housing credit, which constitutes the majority of household credit, only about 39 percent is in the unindexed shekel sector with a variable interest rate, resulting in a lower transmission rate to this sector.

The rate of transmission to the interest rate on household credit was lower than that in the case of business credit.

Figure 5.8 **Pass-Through Rate from the Bank of Israel Interest Rate to the (weighted) Interest Rate on Credit, by Supervisory Activity Segments, Total Banking System, Observed to 2023*** (percent)



* The change observed in a comparison between the weighted interest rate on loans from January 2022 (prior to the rate increases) and the weighted interest rate on loans from December 2023.

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

[12] Credit performance includes loans (credit for a fixed period), credit lines, and on-call credit.

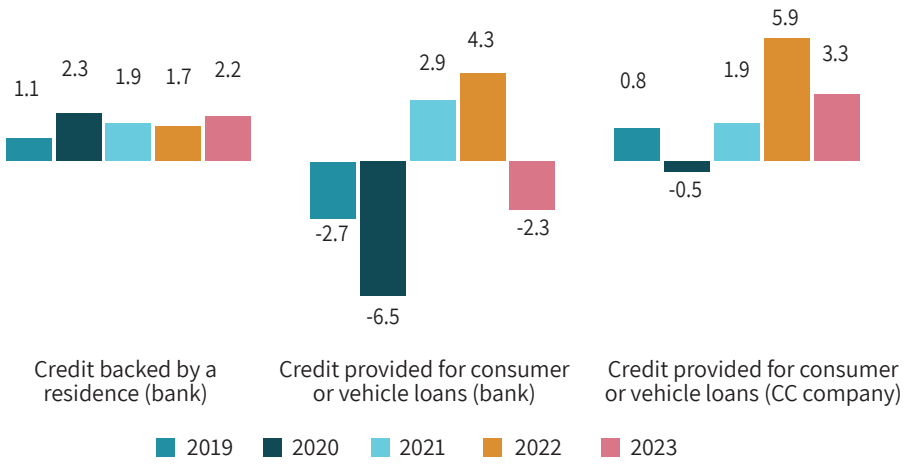
Household nonhousing credit

In 2023, household credit decreased by 1.4 percent (Figure 5.2), with the reduction primarily observed in non-credit-card activities (Table 18). This decline is attributed to the high interest rates described above, while the reduction in the last quarter of 2023 can be partly attributed to the Swords of Iron War. Notably, while fixed-term credit[13] decreased by NIS 2.3 billion during 2023, that type of credit from credit card companies increased by NIS 3.3 billion (Figure 5.9; for more details, see Chapter 5.5 in this survey).

Part of housing credit is for general purposes, though secured by residential property (hence classified as housing credit), so in practice it serves as consumer credit (termed "all-purpose loans" as well. In 2023, general-purpose credit increased by NIS 2.2 billion, a higher growth rate than in the past two years. Notably, all-purpose loans secured by residential property act as a cheaper alternative to consumer loans, which might explain why there wasn't a significant slowdown in this type of credit (Figure 5.9), while consumer credit did experience a reduction. As part of the update to Proper Conduct of Banking Business Directive 251 (Temporary Order) in December 2023, the Banking Supervision Department eased the loan-to-value (LTV) limit on all-purpose loans secured by residential property, by increasing the maximum LTV from 50 percent to 70 percent of the property's value.[14] From that point until April 2024, approximately 3,600 loans were granted under this scheme, totaling about NIS 714 million. These loans constitute about 28 percent of total all -purpose loans secured by residential property.

There were mixed trends this year in consumer credit (including that backed by a residential property) across the various credit sources.

Figure 5.9 **Total Change in Outstanding Consumer Credit of Different Types, Total Banking System, 2019–2023** (NIS billion)



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

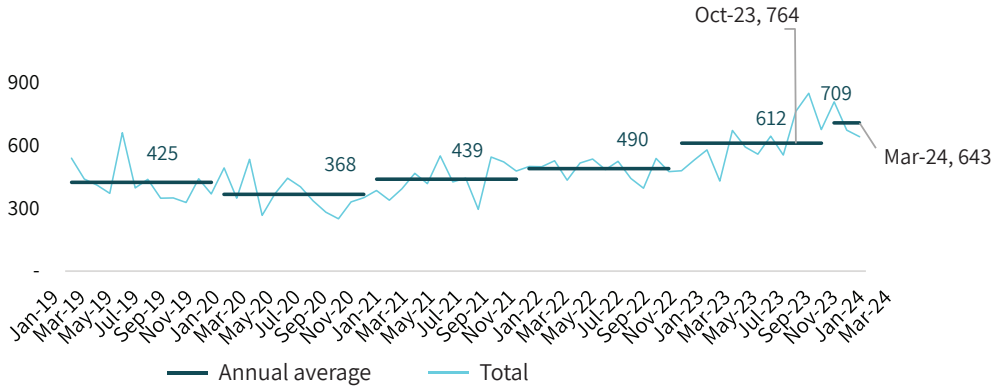
[13] The banks' consumer credit consists of checking account overdraft facilities, activity in the banks' credit cards, security-backed loans (where a vehicle serves as collateral) and uncollateralized loans, where the two latter types are sometimes knows as "fixed-term credit".

[14] On the condition that the amount of the loan above the LTV of 50 percent does not exceed NIS 200 thousand. In addition, an exemption from regulatory restrictions (such as finance rate and PTI rate) was granted for the provision of credit up the amount of NIS 200 thousand that is intended for the construction of a security room (according to the conditions published as part of the directive). These exemptions were provided for three months and were extended in March 2024 by another three months, such that they will remain valid until June 30, 2024.

With the increase in the Bank of Israel interest rate, the debt burden on households has risen.[15] The difficulty in repayment of debt, coupled with the outbreak of the Swords of Iron War, contributed, among other factors, to an increase in the refinancing of household private credit, as shown in Figure 5.10. This trend can be partly explained by households' tendency to reduce their debt burden in such situations.[16] It is noteworthy that the delinquency rate for household credit remained low at 0.7 percent. However, the credit loss provisions rate for this sector increased, alongside a rise in the proportion of nonaccruing credit and credit arrears for over 90 days (Table 16).

Total refinancing by households rose this year and in particular with the outbreak of the war.

Figure 5.10 **Refinancing of Consumer Credit, Total Banking System, January 2019–March 2024*** (NIS million)



* 2024 data are based on January–March data.

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

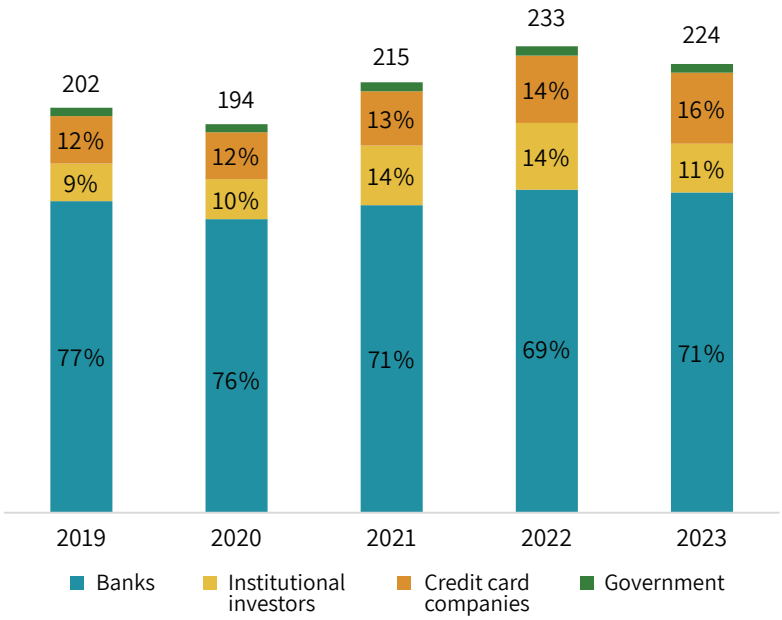
[15] For further details, see Box 5.2 - The Increase in Monthly Payments on Housing Loans and its Causes in Israel's Banking System 2022.

[16] For further details, see Box 4.2 in the Bank of Israel Annual Report for 2023.

As mentioned earlier, bank credit to the household sector decreased ("Consumer Credit"; Figure 5.2), and a similar trend was observed in total household debt (excluding housing; Figure 5.11), with nonhousing household debt falling by NIS 9 billion.[17] However, the change in 2023 varied across financial entities: while bank debt remained almost unchanged (a reduction of NIS 1 billion) and credit card company debt increased by NIS 2 billion, institutional debt decreased by approximately NIS 10 billion. This means that the overall reduction in household debt is primarily explained by the decline in institutional debt (with the decrease concentrated in loans from provident funds and study funds). This reduction was mainly due to decreased demand for new credit and redemptions of existing loans, against the backdrop of the Bank of Israel's interest rate hikes.[18]

Total nonhousing household debt contracted, primarily due to the institutions while there was somewhat of an increase in credit card company credit.

Figure 5.11 Distribution of Households' Outstanding Nonhousing Debt[a], by Source, December 2019–December 2023 (NIS billion)



a Outstanding debt to the banks includes credit issued as an all-purpose loan backed by a residence, and credit that is the responsibility of or backed by banks. It does not include credit from nonresidents, due to a lack of data. it also does not include credit issued by nonbank sources that are not institutional investors or credit card companies.

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

[17] Total debt is calculated before credit loss provisions while total credit is presented after credit loss provisions.

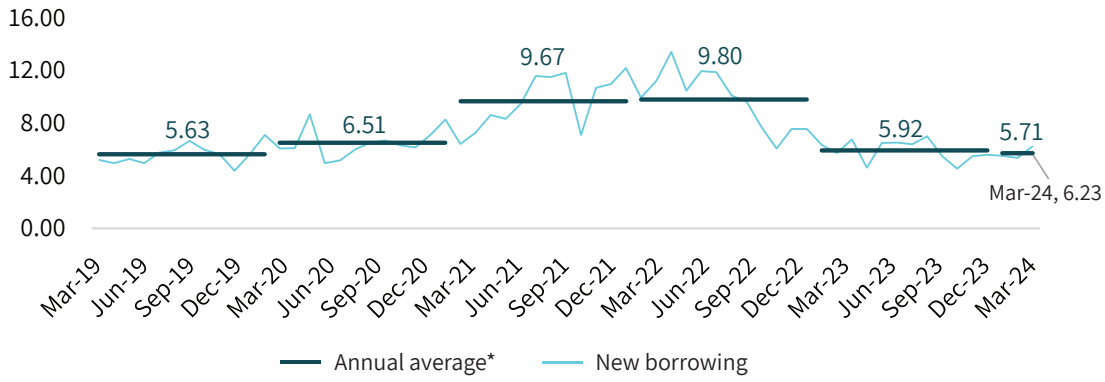
[18] For further details see the Statistical Bulletin for 2023 published by the Information and Statistics Division of the Bank of Israel. In parallel, there was an increase in total nonhousing debt to nonbank companies, as reflected in the Statistical Bulletin and Chapter of the Bank of Israel Annual Report.

Household housing credit

In 2023, the slowdown in new housing credit that began in mid-2022 continued. This trend worsened with the outbreak of the war, such that the annual average in 2023 was lower than in 2020, the year of the COVID-19 pandemic (Figure 5.12). Throughout 2023, new housing credit amounted to NIS 71 billion, a 40 percent decline compared to 2022. From January to March 2024, new credit amounted to about NIS 17 billion, indicating a continuation of the slowdown in housing credit in 2024. The slowdown is also evident in the number of loans, which declined by 41 percent (about 74 thousand loans in 2023 as compared to about 125 thousand in 2022). This trend correlates with the slowdown in the real estate market, which also began in mid-2022. However, there was a partial recovery in January and February 2024, particularly in the purchase of new homes, as indicated by data from the Tax Authority and the Central Bureau of Statistics. Alongside the slowdown in housing credit, a slower increase began in total credit provided through bullet/balloon loans starting in mid-2023, which intensified to some extent in December 2023, although their volumes remained low (Figure 5.13). These loans mainly serve as bridge loans, although the observed increase is primarily attributable to growth in capitalization loans (or contractor subsidy loans) amid increased marketing campaigns by contractors. The marketing campaigns are conducted by contractors, who are interested in bringing buyers back to the market and in reducing the current gap between the high supply and the slowdown in demand. In these loans, buyers are required to pay a portion of the apartment price upon purchase and take out a housing loan for a period of one to three years as a bullet loan, with the interest expenses paid by the contractor. Although this financing benefit is economically valuable to buyers in the current interest rate environment[19], it also carries potential risks. Therefore, the Banking Supervision Department continues to monitor developments in this area. Despite the observed decline in the Housing Price Index (from March to October), the average loan amount remained stable throughout 2023, with an annual average of NIS 960,000 (Figure 5.14).

Total credit provided this year was 40 percent lower by than in 2022.

Figure 5.12 Montly New Housing Credit, Total Banking System, January 2019–March 2024 (NIS billion)



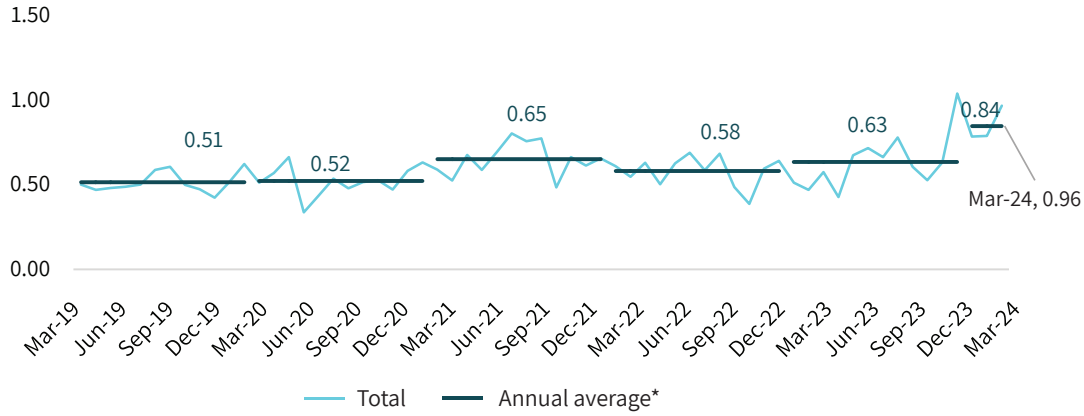
* The annual average for 2024 is based on January–March data.

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

[19] In addition to the contractor paying the interest on these loans, buyers receive a discount equivalent to the interest expenses and avoid the need for indexation of the loan amount to the Construction Inputs Index. This arrangement also frees buyers from the need to quickly sell an existing property in order to finance the purchase of a new one, allowing them to defer taking a long-term housing loan by approximately two to three years.

Total credit provided in the form of bullet/balloon loans grew, particularly in December.

Figure 5.13 Bullet/Balloon Loans in Housing Credit, Total Banking System, January 2019–March 2024 (NIS billion)

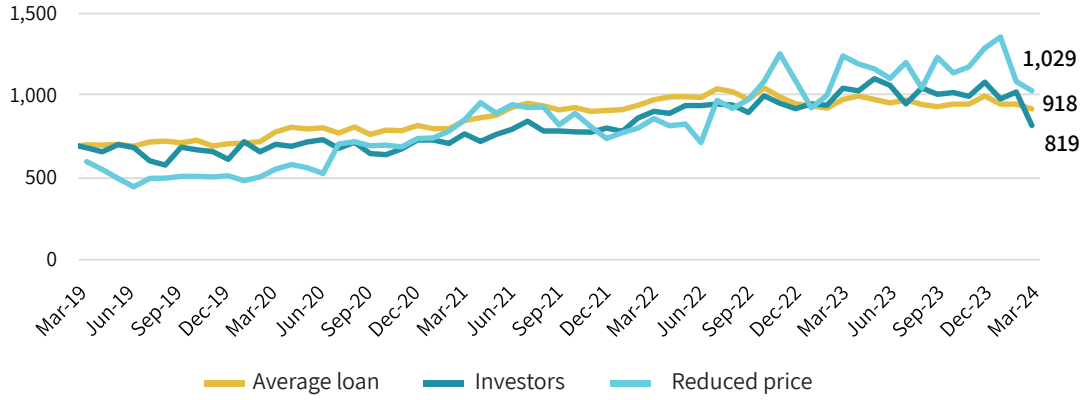


* The annual average for 2024 is based on January–March data.

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

The average loan size remained stable despite the drop in the Housing Price Index during the year.

Figure 5.14 Average Loan Level, Total Banking System, January 2019–March 2024 (NIS thousand)

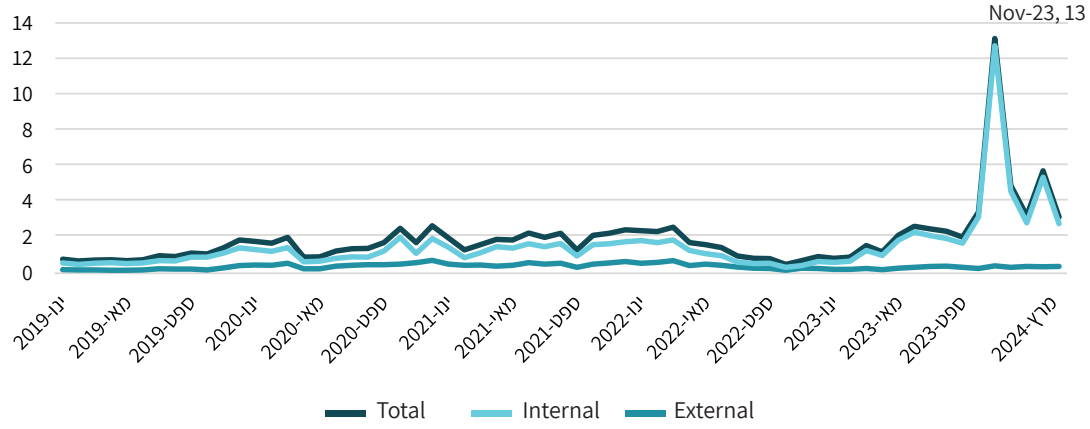


SOURCE: Based on published financial statements and reports to the Banking Supervision Department.

In late 2022, there was an increase in loan refinancing, partly due to rising interest rates and borrowers' need to ease their credit conditions and cash flow. With the outbreak of the Swords of Iron War, the Bank of Israel introduced an assistance plan allowing borrowers to defer loan repayments (for more details, see Box 6.2 in this survey). Some banks extended the duration of the permitted deferral period. With the extension of the assistance plan, and the extension of the deferral period beyond 3 months, there was an increase in refinancing data, in accordance with Banking Supervision Department reporting requirements.[20] In parallel, the slowdown in the granting of credit during this period resulted in a historically high refinancing rate of 53 percent (Figure 5.15).[21]

Total refinancing grew significantly toward the end of the year as a result of the lengthening of the period of deferral, as part of the assistance program adopted as a result of the war.

Figure 5.15 Refinancing of Housing Credit, Total Banking System, January 2019–March 2024 (NIS billion)



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

Apart from the prime interest rate, other interest rates across the various tracks remained relatively stable in 2023. There was a slight decline in the variable unindexed interest rate, following the decrease in yields on short-term (up to 5 years) unindexed government bonds (Figure 5.16). The gap between the prime interest rate and the fixed unindexed interest rate indicates market expectations for a further decrease in the Bank of Israel's interest rate in the future. During 2023, the downward trend in the proportion of housing credit provided at the prime interest rate continued, eventually reaching 10 percent, while the proportion of credit provided at a variable

[20] According to Banking Supervision Reporting Directive 877 paragraph 12c, a loan that is not in arrears and whose monthly repayments have been temporarily deferred for up to three months is not included in "refinanced credit" for the purposes of the directive.

[21] During the COVID-19 period, the banks were instructed not to report on deferrals of up to six months as refinancing. During the period of the Iron Swords war, the instruction to the banks was to report such deferrals and therefore any deferral for a period of up to three moths was reported as refinancing.

unindexed interest rate (not prime) increased, peaking at 33 percent in February 2024. There was also some volatility in the proportion of credit provided at the fixed unindexed interest rate (Figure 5.17). While the date for updating the prime interest rate changes near the time that the Bank of Israel interest rate updates, the timing for updating the interest rate on credit provided at a variable unindexed interest rate (not prime) is updated at the end of each defined period (usually two to five years), based on changes in the "anchor" (nominal government bonds). This indexing segment is less exposed to interest rate changes, thus providing some certainty for borrowers, especially in a rising interest rate environment. The shift in the mortgage loan mix (from prime interest rate credit to variable unindexed interest rate credit that is not prime) has mitigated the increase in the weighted interest rate on a loan at the time it is provided.[22]

The rates of interest on the various tracks were stable during the year, but there was a change in the mix, such that a shift occurred from credit on the prime track to credit on the variable unindexed nonprime track.

Figure 5.16

Interest Rate on Residential Loans by Interest and Indexation Track, Total Banking System, January 2022–March 2024 (percent)

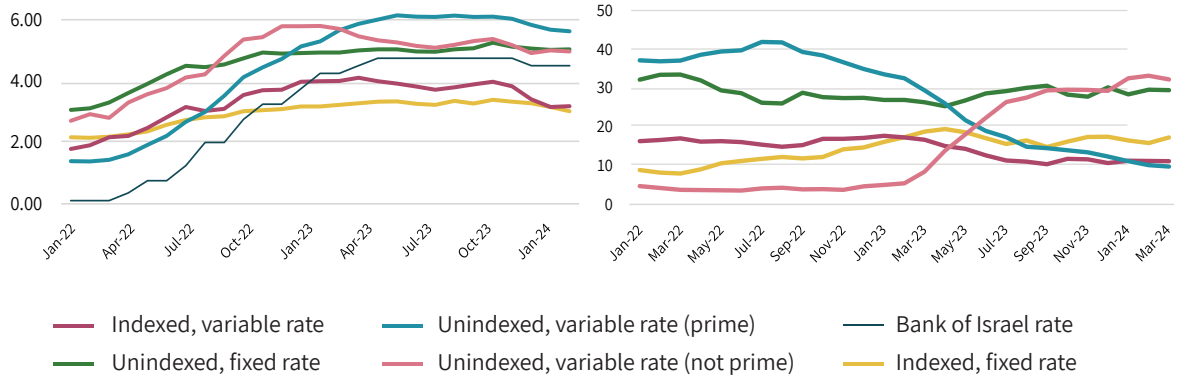


Figure 5.17

Distribution of Interest Rate Tracks as a Share of All New Residential Borrowing, Total Banking System, January 2022–March 2024 (percent)

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

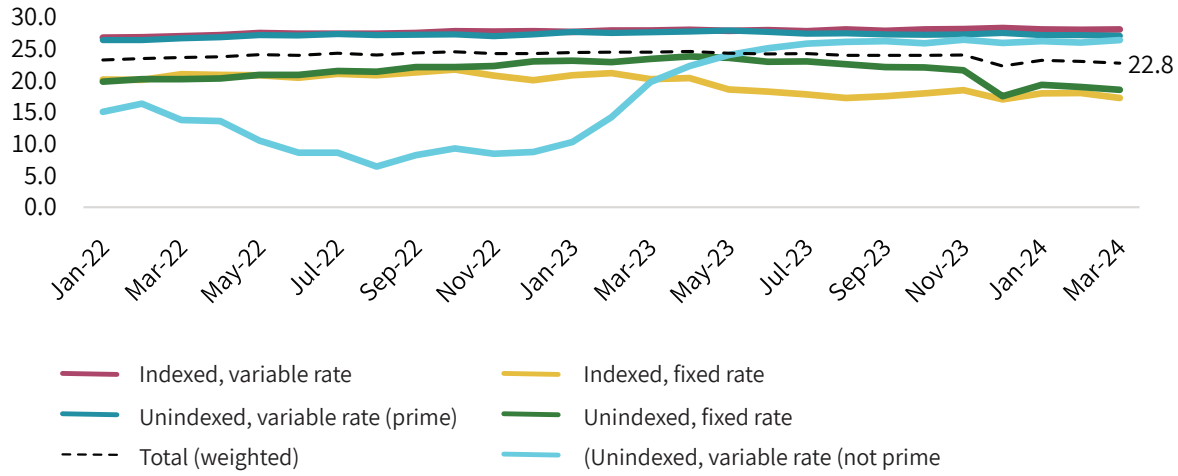
[22] For additional information on the various tracks, see the webpage designated to the subject Mortgage Transparency Reform.

The quality of the housing credit portfolio

Despite the increased risk environment during 2023, the risk indicators in the housing credit portfolio remained relatively stable. Key indicators such as the average repayment period, the payment-to-income (PTI) ratio, and the proportion of loans with high loan-to-value (LTV) and high repayment rates showed no significant changes. The average LTV decreased slightly, while there was a slight increase in the delinquency rate, which is still low from a historical perspective. At the end of 2023, the average repayment period in the housing credit portfolio was about 22.3 years (22.8 years as of March 2024), which was lower than at the end of 2022, when it stood at approximately 24.3 years. The main decline occurred in the last quarter of 2023 (Figure 5.18), which can be attributed to a reduction in the repayment period for fixed-rate unindexed credit. The average LTV in the housing credit portfolio remained nearly unchanged, standing at about 53 percent in March 2024 (Figure 5.19). The average PTI ratio in the housing credit portfolio also remained stable in 2023 at around 29 percent (Figure 5.20).

There was a slight drop in the average period to maturity in the housing credit portfolio.

Figure 5.18 Term to Repayment by Track, Total Banking System, January 2022–March 2024 (years)



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

The average financing rate and PTI rate remained stable during the year.

Figure 5.19

Distribution of New Housing Loans by LTV Rate, Total Banking System, January 2019–March 2024 (percent)

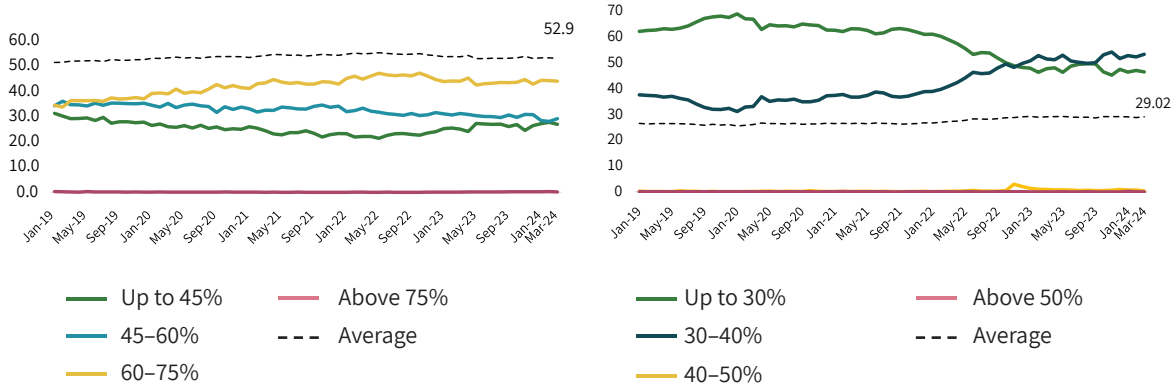


Figure 5.20

Distribution of New Housing Loans by PTI Rate, Total Banking System, January 2019–March 2024 (percent)

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

In line with the stability observed in 2023 in the financing ratio and the average PTI ratio, the proportion of loans given with high LTV ratios (60 percent to 75 percent) and high PTI ratios (30 percent to 40 percent) also remained stable throughout the year. However, these ratios are relatively high historically, reflecting a trend that began in the second half of 2019, and which is an indication of "riskier" loans (Figure 5.21). In addition, the rate of housing credit in arrears over 90 days has been on an upward trend since the end of the first quarter of 2023 and stood at approximately 0.58 percent as of March 2024. This rate is similar to that observed at the start of the COVID-19 crisis but remains low from a historical perspective (Figure 5.22). The increase in refinancing volumes before the war may have been effective for borrowers, helping them manage their debt burden despite the rise in the Bank of Israel interest rate. Moreover, with the outbreak of the Swords of Iron War, the Banking Supervision Department implemented an assistance plan that was adopted by the banking system. This plan allowed borrowers affected by the war to defer loan payments without interest, among other measures. These steps, combined with additional assistance measures implemented by individual banks, likely helped borrowers avoid default, thus maintaining the delinquency rate at a relatively low level compared to the past.

There was stability in the proportion of loans provided at high financing and PTI rates while the rate of delinquencies rose, although its level remained low in historic terms.

Figure 5.21

Weight of Loans with High LTV and PTI Rates, Total Banking System, January 2019–March 2024
(percent)

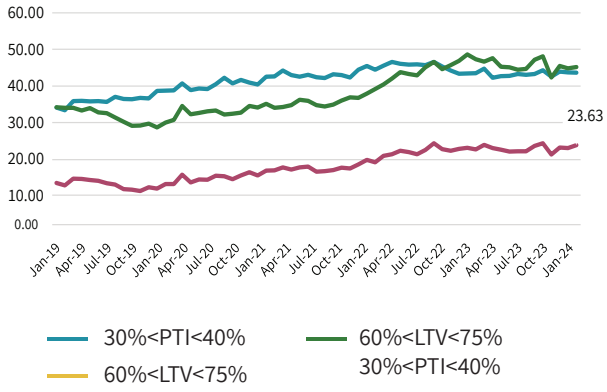
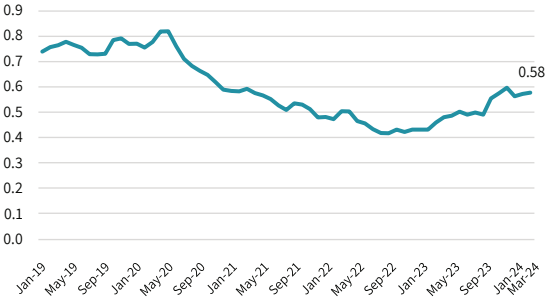


Figure 5.22

Rate of Loans in Arrears (more than 90 days), Total Banking System, January 2019–March 2024
(percent)



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

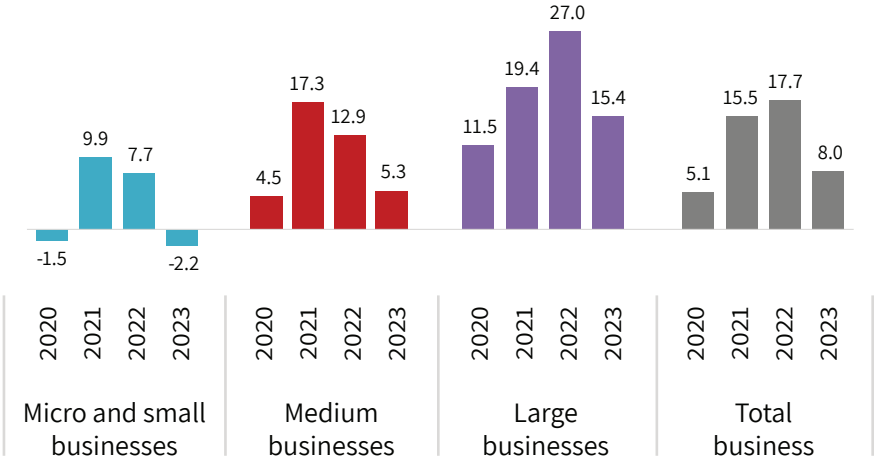
Business credit

The supervised activity segments

The growth in business credit slowed significantly in 2023, standing at approximately 8 percent, compared to around 18 percent in 2022. This slowdown was observed across all activity segments, particularly in the micro and small business segment, where there was even a reduction in total credit (Figure 5.23, Table 19). This segment is more sensitive to interest rate changes and macroeconomic shocks, as is household credit. Business credit provided in 2023 accounts for about one-third of total business credit. Another third is defined as "revolving loans", with the remainder issued in previous years (in contrast to housing credit, most of which was issued more than five years ago; Table 14).

There was a slowdown in the growth of total business credit, and there was even a decline in the micro and small business segment.

Figure 5.23 Rate of Change in Outstanding Credit by Activity Segment, Total Banking System, 2020–2023 (percent)

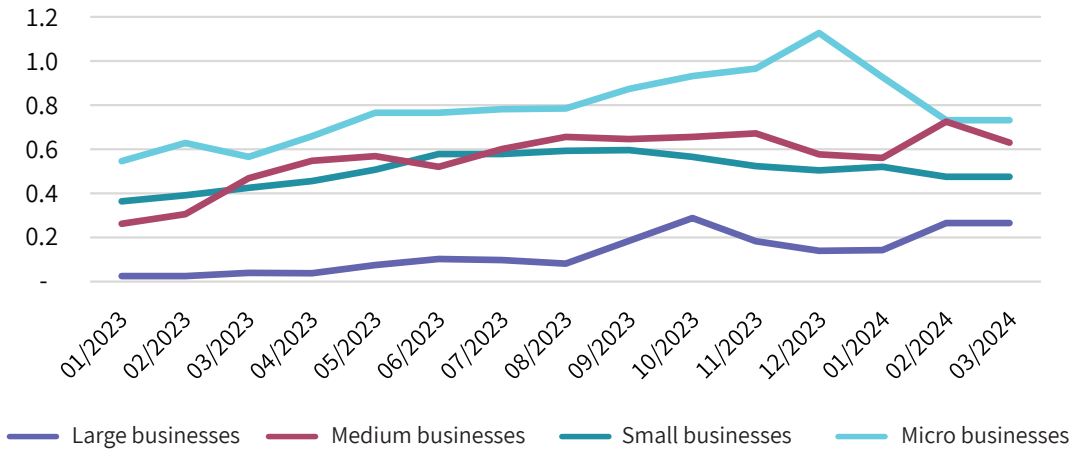


SOURCE: Based on published financial statements and reports to the Banking Supervision Department.

The deterioration in the macroeconomic environment in 2023, combined with the effects of the Swords of Iron War, led to an increase in the delinquency rate (over 90 days), particularly in the micro and large business segments. In the first quarter of 2024, a similar trend (increase) was observed in the medium-sized business segment, while there was a decrease in the micro business segment, possibly due to various assistance programs targeted at micro businesses. Despite this, the delinquency rate remains low (Figure 5.24). This increase indicates a rise in credit risk within the business portfolio, primarily due to the effects of the war.

There was an increase during the year in the rate of credit in arrears of over 90 days in all activity segments.

Figure 5.24 **Rate of Credit More than 90 Days in Arrears by Activity Segment, Total Banking System, January 2023–March 2024** (in Israel, percent)



SOURCE: Based on reports to the Banking Supervision Department.

In 2023, there was an increase in the credit loss provisions across all activity sectors (Figure 5.25), which correspondingly led to a rise in the provision rate for total credit in all segments (Figure 5.26). The main component of this expense throughout 2023 was the collective provision, which was driven by various factors over the course of the year. In the first half, the increase was due to the deteriorating macroeconomic environment and the rising debt burden on borrowers. In the second half, the main factor was the heightened uncertainty due to the effects of the Swords of Iron War.

There was an increase in credit loss provisions across all activity segments. Most of the increase occurred during the second half of the year as a result of the war and was due to the increase in the rate of the collective provision.

Figure 5.25

Total Loan Loss Provisions, Total Banking System, 2019–2023 (NIS million)

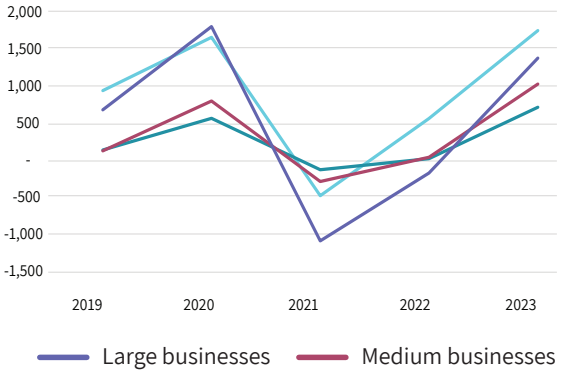
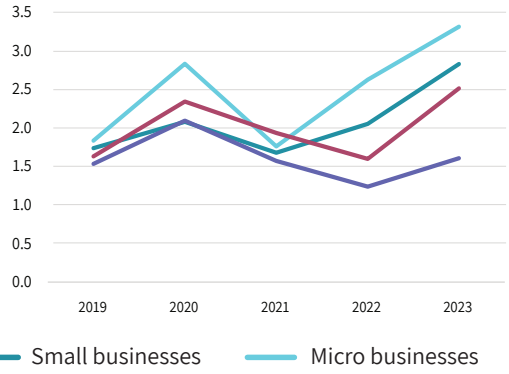


Figure 5.26

Total Loan Loss Provisions, Total Banking System, 2019–2023 (NIS million)



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

The proportion of troubled credit (nonaccruing, impaired or under special supervision) within total credit increased across all activity segments. Troubled credit increased by 37 percent, while nonaccruing credit and credit in arrears of over 90 days (which is used to estimate NPLs) increased by 50 percent. Despite this, the proportion of troubled credit in most segments relative to total credit remains lower than during the COVID-19 crisis (Figure 5.27). The coverage ratio (calculated as the provision for credit losses within total nonaccruing credit and credit in arrears of over 90 days) increased relative to 2022 in almost all activity segments (Figure 5.28). This indicates that the banking system has strengthened its buffer for credit losses, and that it has not been eroded. One of the main factors explaining the different trend observed in the large business segment is that a significant portion of the credit in that segment is to the construction and real estate industry, where the ratio has declined but remains high (for more details, see the following section and Figure 5.31).

There was an increase in the rate of troubled credit this year but it is still low relative to the COVID-19 period in most of the activity segments. In addition, the coverage ratio rose in most of the activity segments.

Figure 5.27

Problematic Credit as a Share of Total Credit, by Activity Segment, Total Banking System, 2019–2023 (percent)

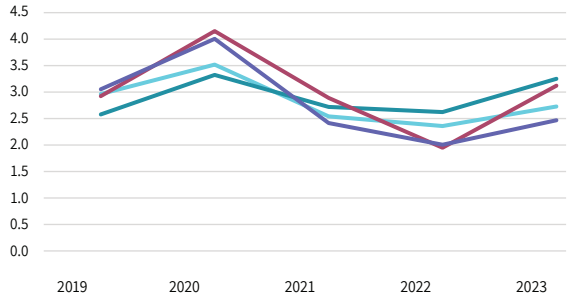
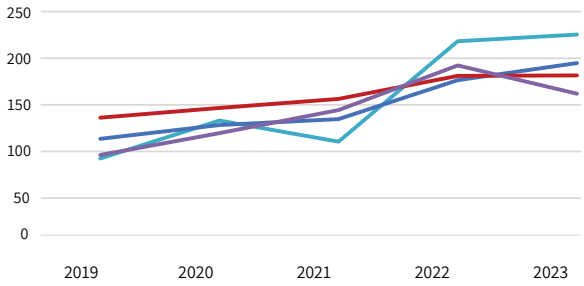


Figure 5.28

Coverage Ratio* by Activity Segment, Total Banking System, 2019–2023 (percent)



* Total credit loss allowance as a share of total noninterest-bearing credit and interest-bearing credit more than 90 days in arrears.

Large businesses Medium businesses Small businesses Micro businesses

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

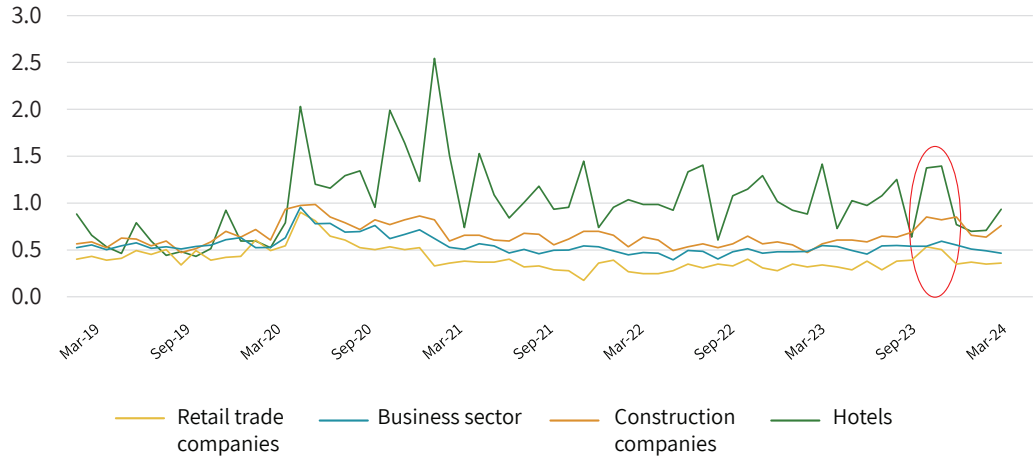
The various industries of the economy

The Swords of Iron War had an immediate impact on the entire economy, but most sectors eventually experienced almost full recovery. Nonetheless, certain industries are still facing significant difficulties, particularly financing difficulties, and specifically the hotel industry, as highlighted by the Central Bureau of Statistics Business Tendency Survey (Figure 5.29).[23]

[23] For further details see Chapter 2 of the Bank of Israel Annual Report for 2023.

The outbreak of the war led to problems in securing sources of financing.

Figure 5.29 Distribution of Financing Difficulties in the Business Tendency Survey, by Bank Credit Segmenta, Total Banking System, January 2019–March 2024 (percent)



a The data are measured on a scale of 0–3, by the extent of severity of the constraint (slight to serious).
SOURCE: Central Bureau of Statistics.

Regarding the quality of the business credit portfolio, there was a deterioration in all credit quality indexes: credit loss provisions increased across all industries, particularly construction and real estate and commerce (Figure 5.30). The main expense was due to provisions for credit losses, bringing the provision rate relative to total credit to a level similar to that during the COVID-19 crisis in 2020 (Figure 5.31). The increase in credit loss provisions in 2023 was mainly driven by an increase in the collective provision for credit losses, due to macroeconomic adjustments (increased likelihood of an economic slowdown due to prolonged high interest rates and the war's impact). This increase was partly due to the rise in the quantity of troubled credit (Figure 5.32). The coverage ratio (the total provision for credit losses relative to nonaccruing and troubled credit in arrears of over 90 days)[24] decreased slightly compared to 2022 (excluding construction and real estate, the ratio increased; Figure 5.33). The explanation for the decrease in the coverage ratio in construction and real estate is that, despite the increase in provisions for credit losses (meaning banks continue to maintain a substantial buffer for the industry), nonaccruing credit and credit in arrears of over 90 days increased to a greater extent, leading to a decrease in the ratio (indicating erosion of the buffer in this industry, though it remains adequate).

[24] Troubled credit is divided into accruing and nonaccruing credit. Nonaccruing credit and credit in arrears of over 90 days represent an estimate of NPLs, which is an "objective" measure of troubled credit across the various banks. Therefore, it is appropriate to include it in the denominator (arrears of up to 90 days are sometimes merely technical delays). It is worth noting that most problematic credit is actually accruing credit that is not in arrears of over 90 days.

There was an increase in credit loss provisions in all industries and in particular construction and real estate and commerce. The main part of the increase was a result of the increase in the rate of provisions, which reached a level similar to that during the COVID-19 period.

Figure 5.30

Loan Loss Provisions by Main Industry, Total Banking System, 2019–2023 (NIS billion)

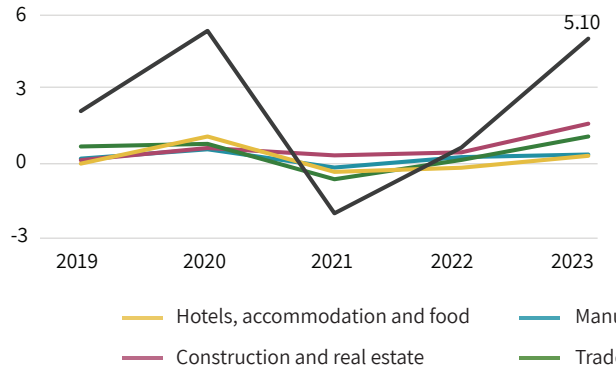
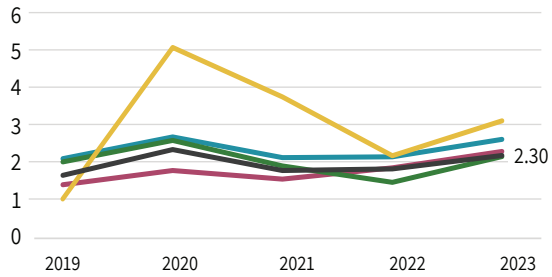


Figure 5.31

Credit Loss Allowance as a Share of Total Credit by Main Industry, Total Banking System, 2019–2023 (percent)



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

There was an increase in the rate of troubled credit, although it is still low relative to the COVID-19 period. In addition, the coverage ratio fell slightly in light of the drop in the ratio in the construction and real estate industry.

Figure 5.32

Problematic Credit as a Share of Credit by Main Industry, Total Banking System, 2019–2023 (percent)

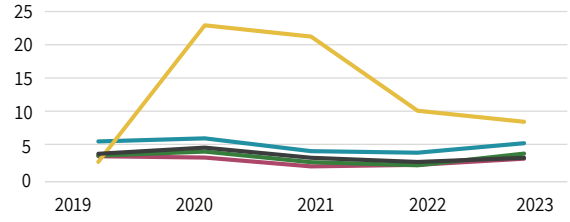
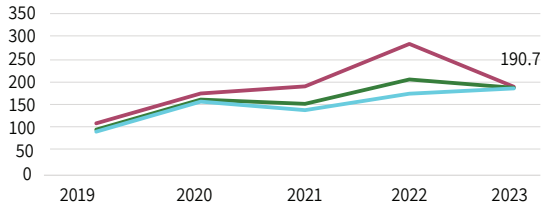


Figure 5.33

Coverage Ratio*, Total Banking System, 2019–2023 (percent)



* Total credit loss allowance as a share of total noninterest-bearing credit and interest-bearing credit more than 90 days in arrears.

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

During the first quarter of 2024, the S&P and Moody's credit rating agencies published assessments of the resilience of the banks in Israel. They identified the construction and real estate sector, which constitutes about 40 percent of business credit and 19 percent of total public credit (Table 17), as one of the highest-risk industries due to the war, along with tourism, services, and the micro and small business sectors. However, the high inherent demand for housing credit, which makes up about 37 percent of total credit, and the low LTV ratios of housing credit (due to conservative underwriting standards and close supervision by the Banking Supervision Department) help mitigate the banks' risk. The rating agencies noted the weaknesses in the construction and real estate industry, including the impact of labor shortages and exposure to land and commercial real estate (for more details, see Box 5.1 in this survey and further details in the following section).

The construction and real estate industry

As of the end of 2023, the construction and real estate industry accounted for about 40 percent of business credit (Figure 5.34) and about 20 percent of total credit to the public in Israel. It has driven the growth of the credit portfolio in Israel (Figure 5.35). **The growth rate of credit to the construction and real estate industry remained high in 2023, at approximately 14 percent (with particularly high growth in the first quarter of the year, which slowed thereafter), a high rate compared to other industries, although lower than the 18.6 percent growth rate in 2022.** This moderation in the growth rate of construction and real estate credit is mainly explained by a slowdown in activity in the housing market and a decrease in home sales, alongside increased financing costs and a slowdown in the hi-tech sector, which led to a slowdown in the office market and a slowdown in the last quarter of 2023 as a result of the Swords of Iron War.[25]

[25] For further details on the effects of the war on activity in the construction industry, see Chapter 5 in the Bank of Israel Annual Report for 2023.

The leading industry in terms of business credit is construction and it led the growth of the credit portfolio (together with real estate).

Figure 5.34

Distribution of Balance-Sheet Credit by Main Industry, Total Banking System, December 2023 (percent)

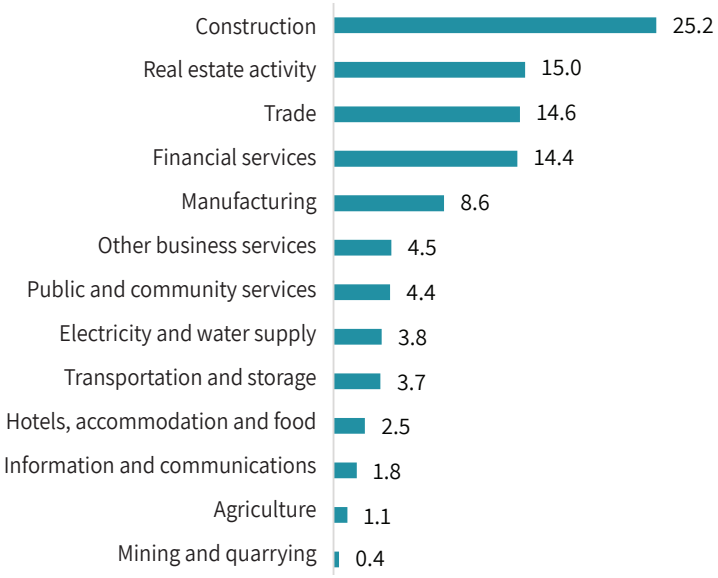
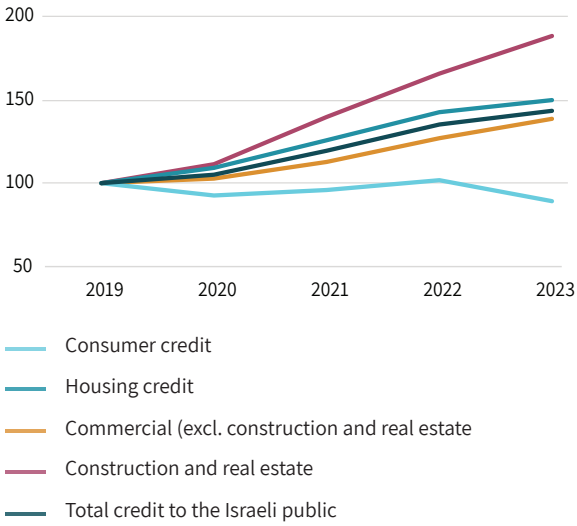


Figure 5.35

Development of Outstanding Balance-Sheet Credit in the Main Industries, Total Banking System, 2019–2023 (index: December 2019=100)



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

At the end of 2023, credit to the construction and real estate industry stood at approximately NIS 296 billion (Figure 5.3), with about 34 percent of that allocated to land financing (Figure 5.36). The accelerated growth in credit in the construction and real estate industry indicates an increase in credit risk within the banking system for this industry, especially given the high interest rate environment and the impact of the Swords of Iron War (for more details, see Box 5.1 in this survey). Credit for construction mainly consists of land financing and project financing during construction (primarily residential projects). The latter includes debt provided by the banks to contractors and Sale Law guarantees issued by banks to homebuyers. Amid the sales slowdown, there is also a slowdown in the growth rate of Sale Law guarantees provided by the banks. However, debt to the construction sector continues to grow rapidly, particularly in comparison to the overall business portfolio and the housing portfolio which is due to the increasing credit needs in order to promote projects, especially against the backdrop of sales slowdowns and the consequently slower inflow of sales proceeds (Figure 5.37).

The balance-sheet credit in the construction industry grew more rapidly than off-balance-sheet credit (and in particular Sales Law guarantees).

Figure 5.37

Development of Bank Credit in the Construction Industry (Debts and Guarantees), Total Banking System, 2019–2023 (index: December 2019=100)

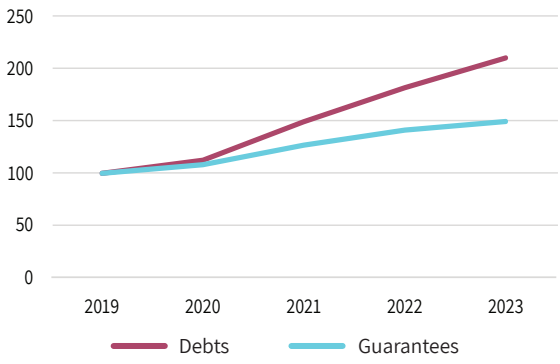
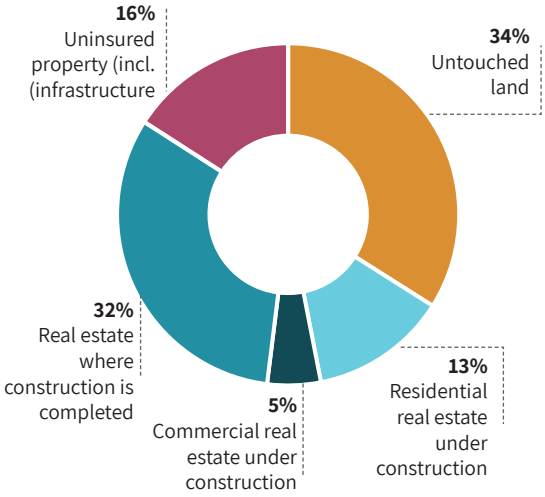


Figure 5.36

Distribution of Balance-Sheet Credit Risk in the Construction and Real Estate Industry, Total Banking System, December 2023 (percent)



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

3. LIQUIDITY RISK

During 2023, there was an improvement in various liquidity metrics, which are now well above the minimum requirements set by the Banking Supervision Department. In the first half of the year, the Bank of Israel significantly increased the volume of *Makam* issuances[26] in response to high demand[27], leading to a decrease in the monetary deposits of banking corporations. Additionally, there was a continued shift of public funds into longer-term deposits due to the high interest rate environment. Meanwhile, the Bank of Israel monitored liquidity risk developments abroad, especially following the banking crises in the US and Europe (for further details, see Box 5.2 in this survey). In the last quarter of the year, the Swords of Iron War broke out. The significant increase in government spending as a result of the war led to a rise in public deposits and government bond issuances. This increase in public deposits was not matched by a similar increase in total credit, resulting in a rise in monetary deposits at the Bank of Israel at the expense of *Makam* issuances. Additionally, the public appeared to prefer holding shorter-term deposits in the last quarter, likely due to the increased uncertainty.

As part of liquidity risk management, Basel III established two standard liquidity ratios that banks are required to meet. The first is the Liquidity Coverage Ratio (LCR)[28], which assesses whether banks have sufficient liquidity buffers to withstand a significant stress scenario lasting 30 calendar days. The second is the Net Stable Funding Ratio (NSFR)[29], which is used to determine whether banks are maintaining a stable funding profile that is in line with the composition of their on-balance sheet assets and off-balance sheet activities. Compliance with this ratio indicates that sufficient stable funding sources are available to meet the required funding (with a forward-looking one-year horizon). Meeting both ratios simultaneously mitigates liquidity risk that may result from unexpected changes in cash flows.

During 2023, there was an improvement in the Liquidity Coverage Ratio (LCR), especially in the last quarter of the year. In the first quarter, this ratio decreased relative to December of the previous

[26] *Makam* are securities sold by the Bank of Israel for short periods (up to about a year). These securities enable the Bank of Israel to inject or absorb liquidity. *Makam* are issued to the general public and can be traded on the stock exchange. *Makam* are issued every month, such that at any given time, there are 12 tradable series of *Makam* with maturities of up to a year. The yields on *Makam* can be used to estimate the public's inflation expectations, thereby aiding in the management of monetary policy for periods of up to a year.

[27] For further details on the rise in demand for *Makam* and the expansion of the *Makam* tenders, see the Bank of Israel's press release from November 24, 2022. [Hebrew]

[28] The LCR, developed by the Basel Committee to enhance the short-term resilience of banking corporations' liquidity profiles, is a measure of the quantity of High-Quality Liquid Assets (HQLA) that banking corporations should hold in order to withstand a significant stress scenario that lasts for 30 calendar days. The LCR is composed of two elements. The first, on the numerator side, is the inventory of HQLA, comprised of two levels of assets: Level 1, formed of high-quality assets that may be held in unlimited amounts, and Level 2, composed of assets that are limited to a maximum aggregate holding of 40 percent of the HQLA inventory. (This level is divided into two sublevels: 2A and 2B. At the latter level, the share of assets that may be held is limited to 15 percent.) The second element, on the denominator side, is the total net cash outflow, i.e., the expected total cash outflow less the expected total cash inflow in the stress scenario. The expected total cash outflow is calculated by multiplying the balances of different categories or types of balance-sheet and off-balance-sheet liabilities by their expected runoff or drawdown rates. The total expected cash inflow is calculated by multiplying outstanding contractual receivables by the rates at which they are expected to be received in the scenario, up to a cumulative 75 percent of the predicted total cash outflow.

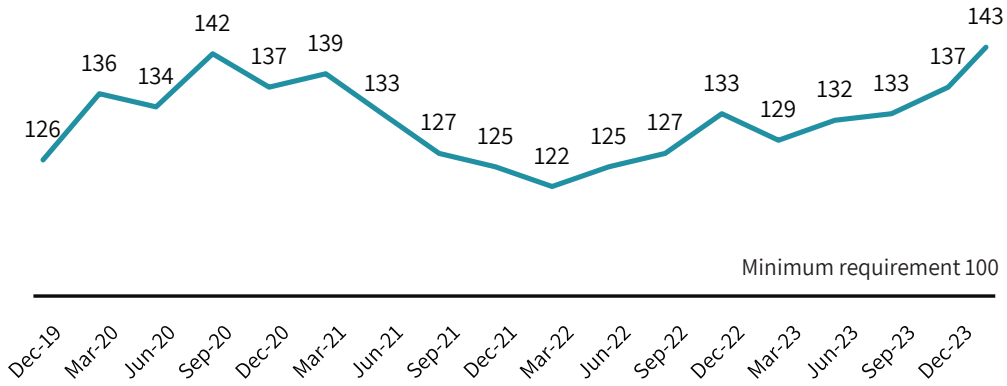
[29] The goal of the NSFR is to improve the stability of the banking system's financing profile in the long term based on a requirement that the financing of the bank's activity be primarily based on financing sources that are relatively stable and long term (one year or more). The NSFR is composed of two components: the numerator – the available amount of stable funding (ASF), which is the part of capital and of liabilities that can be relied on as a source of financing over a period of one year or more; and the denominator – the required amount of stable funding (RSF), which is the total assets (including non-balance-sheet exposures) that the bank expects to have to finance over a period of one year or more and therefore stable and available financing should be maintained against it.

year, but improved in the subsequent quarters. The LCR was estimated at about 137 percent at the end of 2023, as compared to 133 percent at the end of 2022, which is significantly above the minimum requirement set by the Banking Supervision Department (Figure 5.38). At the beginning of 2023, the LCR decreased due to a reduction in both the stock of high-quality liquid assets (HQLA) and net cash outflows, though the reduction in HQLA was more significant. The decrease in HQLA was mainly due to a decline in monetary deposits at the Bank of Israel, partially offset by an increase in banks' holdings of *Makam*, which coincided with increased *Makam* issuances by the Bank of Israel. The decrease in net cash outflows was due to the banks' foreign exchange activities, which led to an increase in cash inflows, combined with a shift of public deposits (mainly retail and small businesses) to periods of longer than 30 days and increased *Makam* purchases by institutional investors, resulting in a more moderate reduction in cash outflows.

After the first quarter and until the end of the third quarter of 2023, the Bank of Israel continued to increase *Makam* balances at the expense of monetary deposits, albeit on a smaller scale, which slowed the decrease in the stock of HQLA (in parallel to the shift in the mix between monetary deposits and *Makam* holdings). Additionally, there was a slightly faster reduction in the 30-day net cash outflow due to a decrease in nonfinancial institutional and wholesale deposits, leading to a slight improvement in the LCR. In the fourth quarter, there was an increase in the stock of HQLA, mainly due to an increase in cash and deposits at the Bank of Israel, as government deposits grew in response to increased government spending due to the war, which increased the public's deposits without a similar increase in credit. There was also an increase in eligible tradable securities (mainly due to the banks' purchase of government bonds; for more details, see Chapter 2 of this survey). The increase in the public's deposits, mainly in current accounts, led to a rise in cash outflows, but at a more moderate pace (Figure 5.39). This shift in the trend of the HQLA inventory, alongside the slowdown in credit balances, led to an improvement in the LCR at the end of 2023 and the beginning of 2024. Notably, in the early months of 2024, there was a continued reduction in *Makam* issuances by the Bank of Israel, alongside an increase in monetary deposits. In addition, increased purchases of government bonds by banking corporations further supported the growth in HQLA. At the same time, there was a moderate reduction in net cash outflows, mainly due to a slight decrease in nonfinancial wholesale and institutional deposits, resulting in a further increase in the LCR to 143 percent at the beginning of 2024.

There was an improvement in the LCR starting in the second quarter with the main increase in the last quarter.

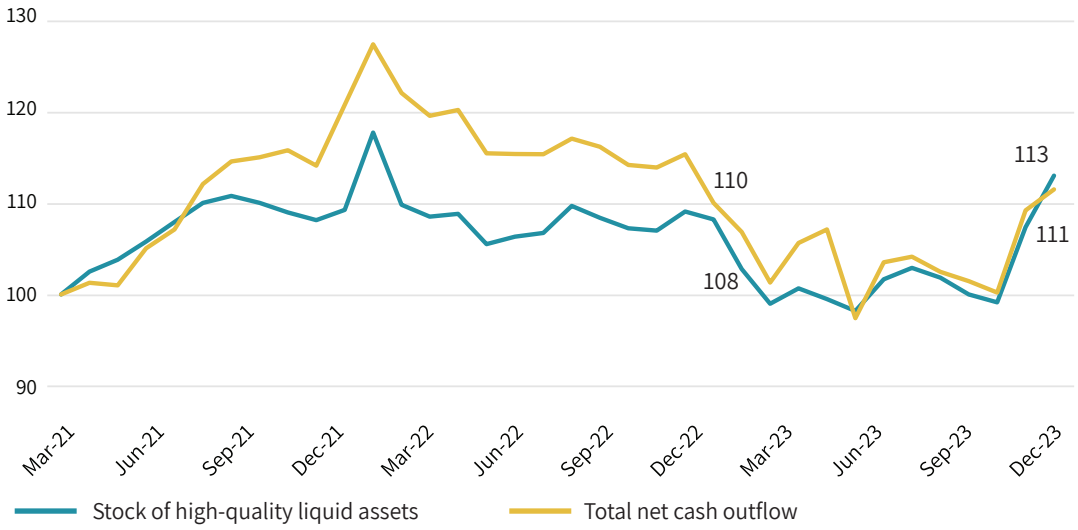
Figure 5.38 Liquidity Coverage Ratio (LCR), Total Banking System, September 2019–February 2024 (percent)



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

There was a change in the fourth quarter of the year where the increase in the inventory of HQLA was more rapid than the increase in net 30-day outflows.

Figure 5.39 High-Quality Liquid Assets (HQLA) and Net Cash Outflow, Total Banking System, January 2021–December 2023 (index: January 2021=100)

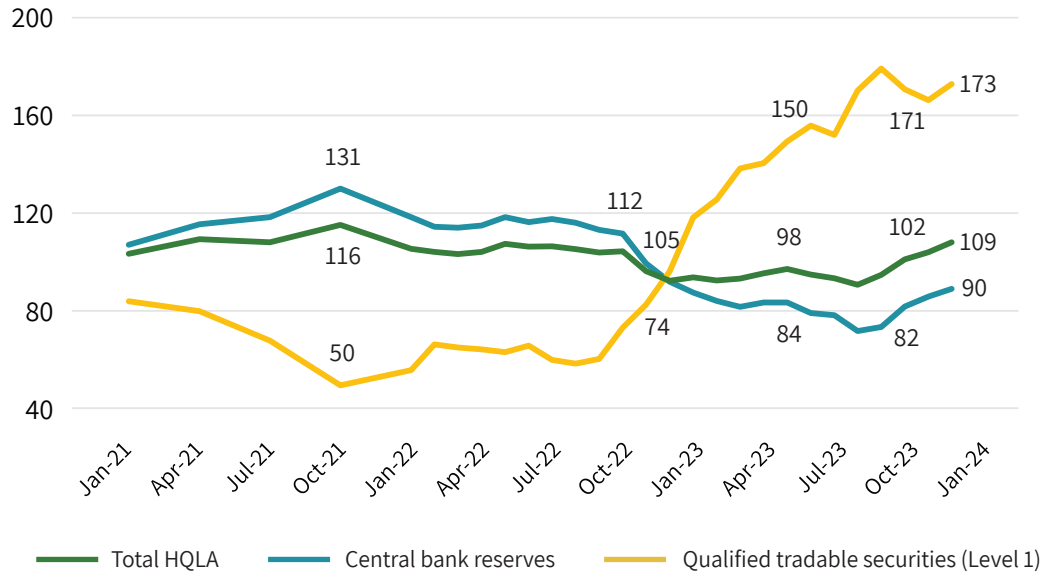


SOURCE: Based on published financial statements and reports to the Banking Supervision Department.

As noted above, the inventory of HQLA[30] decreased slightly during 2023 (Figures 5.40 and 5.41). The overall decrease for the year amounted to approximately NIS 15 billion. The primary driver of this decline was a reduction of NIS 122 billion in cash and deposits at the Bank of Israel, which was partially offset by an increase of NIS 84 billion in eligible tradable securities. In the fourth quarter, the trend reversed, and there was an increase in cash and deposits at the Bank of Israel of NIS 15 billion, mainly due to the growth in the public's deposits. The eligible tradable securities segment grew throughout 2023, with the increase in the first three quarters mainly attributable to the rise in Makam holdings by banking corporations. In the last quarter, the growth in this segment was due to increased government spending in the context of the war, leading to significant government bond issuances and increased holdings by banking corporations, partially offset by a decrease in Makam holdings. In the first two months of 2024, the trend during the fourth quarter of 2023 continued, with an increase of NIS 32 billion in total HQLA, almost entirely due to a rise in cash and deposits at the Bank of Israel (approximately NIS 30 billion). This increase led to a further rise in the LCR to 143 percent in February 2024.

Starting in the fourth quarter of the year, there was an increase in the inventory of HQLA which was primarily due to the growth in deposits held at the Bank of Israel.

Figure 5.40 **Volume of High-Quality Liquid Assets (HQLA)a and Its Main Components, Total Banking System, January 2021–February 2024** (index: January 2021=100)

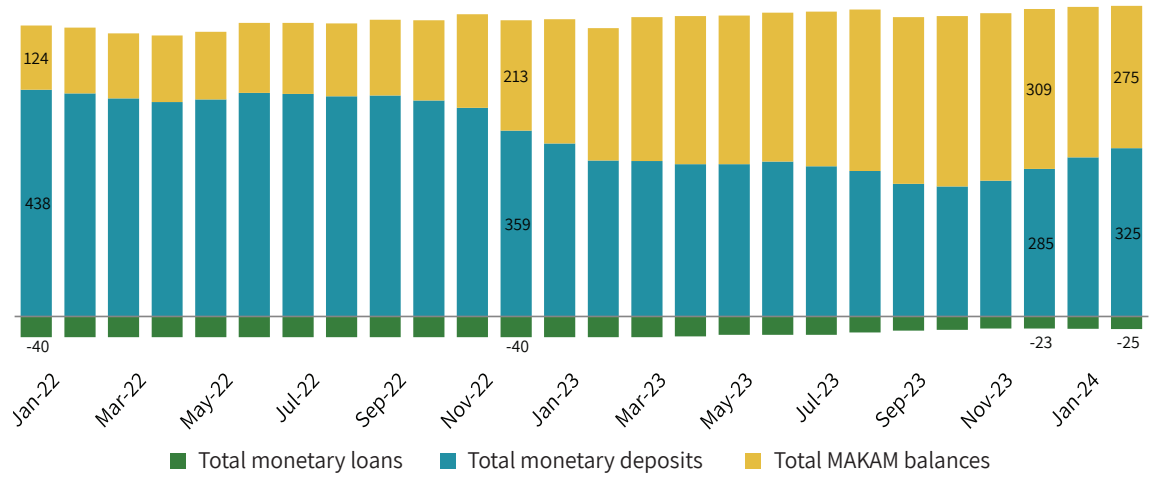


a As defined in Proper Conduct of Banking Business Directive 221.
SOURCE: Based on published financial statements.

[30] The reduction relates to the inventory of HQLA in Israeli currency.

Starting from the fourth quarter of the year, there was an increase in monetary deposits at the expense of *Makam* issuances.

Figure 5.41 Total Monetary Deposits and Loans, and Total MAKAM Balances, January 2022–February 2024 (NIS billion)



SOURCE: Bank of Israel Information and Statistics Department.

The NSFR declined during the first three quarters of 2023, with a slight recovery in the fourth quarter that partially offset the decline. By the end of 2023, the NSFR stood at approximately 123 percent, compared to 126 percent in December 2022 (Figure 5.42). The decrease in this ratio relative to December 2022 was due to a 5.6 percent annual increase in RSF items, primarily driven by the increase in loans, while the ASF items grew by only about 2.9 percent annually (Figure 5.43). In the last quarter, the ratio improved due to an increase in retail and small business deposits and a slight increase in equity, alongside a slowdown in the growth rate of loans. Despite the decline in this ratio in 2023, the NSFR remains well above the minimum requirement set by the Banking Supervision Department, namely 100 percent.

The NSFR eroded somewhat during the first three quarters of the year. In the fourth quarter, with the slowdown in the growth of total loans and faster growth in ASF, the erosion of the ratio was halted.

Figure 5.42

Net Stable Funding Ratio (NSFR), Total Banking System, December 2022–December 2023
(percent)

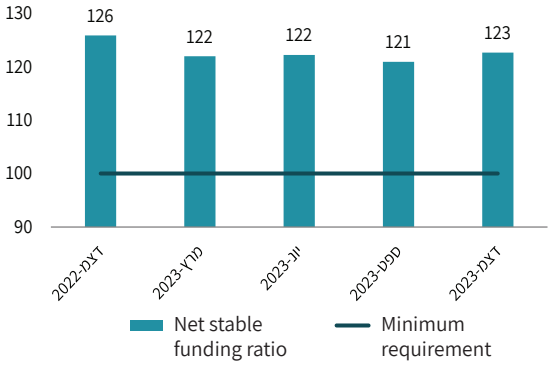
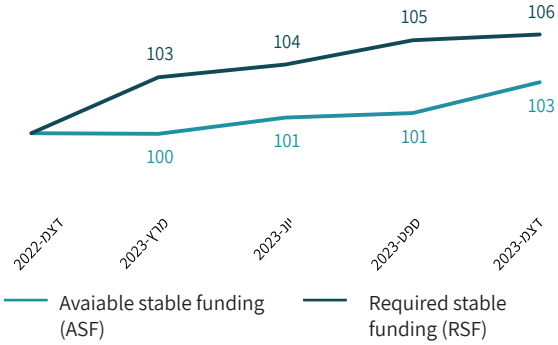


Figure 5.43

Total Available Stable Funding (ASF) and Total Required Stable Funding (RSF)a, Total Banking System, December 2022–December 2023
(index: December 2022=100)



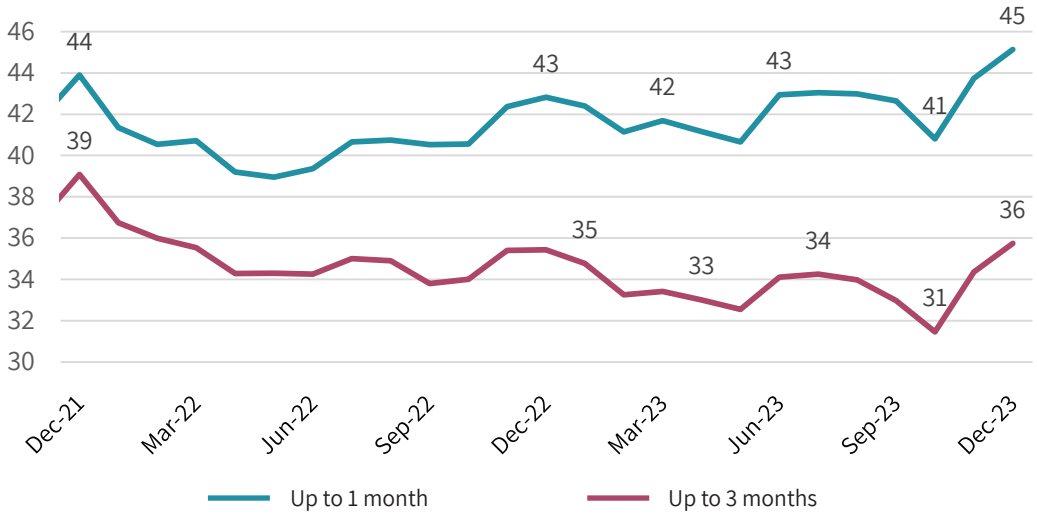
a As defined in Proper Conduct of Banking Business Directive 222

SOURCE: Based on published financial statements.

In 2023, there was an increase in the ratio of liquid assets to short-term liabilities (whether for a period of up to one month or up to three months). In the first nine months of the year, the ratio of liquid assets to liabilities up to one month remained at a similar level due to similar decreases in the stock of liquid assets (a 10 percent annual decrease, mainly due to the shift of monetary deposits to Makam by institutional investors) and in liabilities up to one month (a 9.5 percent annual decrease, reflecting the shift of cash balances from current accounts to fixed-term deposits). At the same time, the ratio between the stock of liquid assets and liabilities up to three months remained almost unchanged (a 0.8 percent annual decrease). At the beginning of the last quarter of the year, there was a decrease in this ratio due to a sharp increase in October in short-term liabilities both up to one month and up to three months, driven by the increase in public deposits. Subsequently, with the increase in the stock of liquid assets, there was an improvement in the ratio to liabilities up to one month (which continued to grow at a slower pace) and also in the ratio to liabilities up to three months (Figure 5.44).

As a result of the war, there was an increase in the ratio of liquid assets to short-term liabilities during the fourth quarter of the year.

Figure 5.44 **Ratio of Liquid Assets to Short-Term Liabilities, Total Banking System, December 2020–December 2023** (percent)



SOURCE: Based on published financial statements.

Starting from the second quarter of 2022, when the Bank of Israel began raising the interest rate, there was a trend among the public to deposit funds in relatively long-term deposits. This trend continued at a slower pace across all sectors during the first nine months of 2023, particularly in retail and small business deposits (during the first nine months of 2023, deposits locked in for up to one month decreased by 12 percent, while deposits for more than one month increased by 31 percent, in annual terms). In the last quarter of 2023, there was a shift in this trend, with an increase in deposits up to one month and a decrease in deposits of more than one month (a 27 percent increase in deposits for up to one month and a 7 percent decrease in deposits for over one month, in annual terms; for more details, see Chapter 2 of this survey). The trends in deposits for up to one month encompassed all activity sectors, especially nonfinancial wholesale sectors (about 56 percent of the change in the last quarter was due to an increase in their deposits). At the beginning of 2024, this trend slightly moderated for total public deposits, but there was still a slight increase in retail and small business deposits up to one month, as compared to a slight decrease in deposits for more than one month (Figures 5.45 and 5.46).

There was an increase in short-term deposits of up to one month due to the government injections and the increase in uncertainty.

Figure 5.45

The Public's Deposits by Depositor Type, Up to 1 Month, Total Banking System, March 2022–December 2023 (index: March 2022=100)

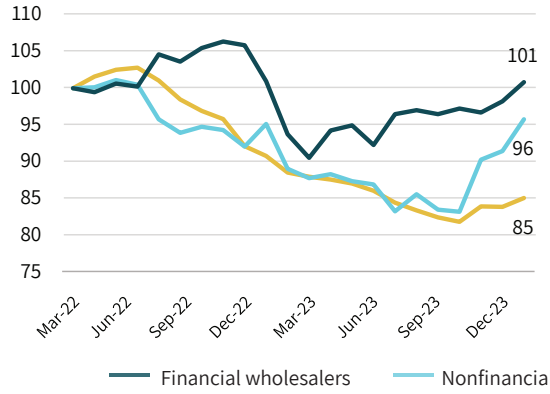
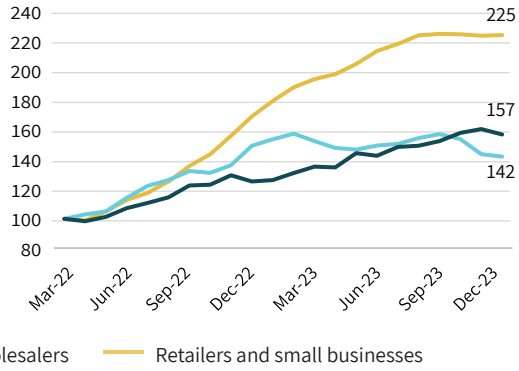
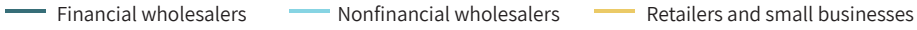


Figure 5.46

The Public's Deposits by Depositor Type, More than 1 Month, Total Banking System, March 2022–December 2023 (index: March 2022=100)





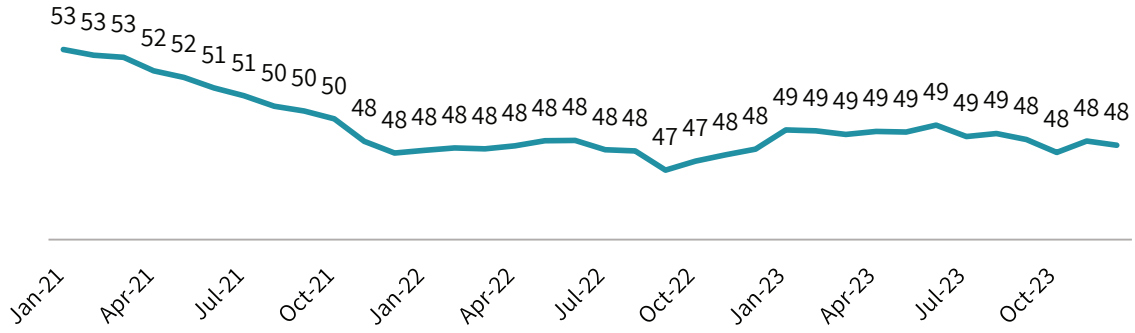
SOURCE: Based on published financial statements.

The Core Funding Ratio (CFR)[31], which measures the quality of a bank's funding sources, i.e., the proportion of stable liabilities within total liabilities, increased slightly in the first half of 2023 to 48.9 percent, due to a decrease in total liabilities alongside an increase in retail deposits. Starting in June, there was a consistent increase in total liabilities, which slowly eroded the ratio until the significant drop in October 2023 to 47.7 percent, following a sharp rise in liabilities due to government inflows into the public's deposits as a result of the war (Figure 5.47). The increase in the fourth quarter of 2023 was mainly due to the growth in retail and small business deposits, alongside relative stability in total liabilities. This trend continued in February 2024, resulting in a slight increase in the CFR to 48.5 percent.

[31] According to the definition of the European Banking Authority (EBA), the CFR is composed of two components: in the numerator – total stable liabilities, which is composed of total retail deposits, total wholesale deposits for a period of over one year and bonds and deferred promissory notes; while in the denominator – total liabilities.

The CFR fell during the second half of the year until October, when there began an increase due to the growth in retail and small business deposits.

Figure 5.47 Core Financing Ratio (CFR)a, Total Banking System, January 2021–December 2023 (percent)



a According to the EBA definition, the core financing ratio is comprised of the following two components. The numerator is the total stable liabilities, comprised of the balance of retail deposits, the balance of wholesale deposits of more than one year, and bonds and deferred liabilities. The denominator is total liabilities.

SOURCE: Based on reports to the Banking Supervision Department.

4. MARKET RISK

The level of uncertainty in the markets remained high throughout 2023 (Figure 5.48), due to ongoing interest rate hikes and the slowdown in the expected rate cuts, driven by persistent inflation in many countries, and particularly in Israel. In Israel, political uncertainty surrounding legislative processes related to the judicial system and uncertainty regarding the duration and resolution of the Swords of Iron War, which broke out in the last quarter of the year and the potential for the conflict to expand to the northern front, affected both real economic activity and financial markets. These effects were reflected in, among other things, an increase in Israel's risk premium in financial markets and the downgrading of Israel's credit rating and that of the banks by Moody's and S&P[32], alongside the announcement of a negative rating outlook. The importance of market risk management for the stability of the banking system was highlighted during 2023 following the collapse of banks in the US (for further details, see Box 5.2 in this survey), which were the result of, among other reasons, missteps in market risk management.

During the course of the year, there was significant volatility in the exchange rate of the shekel, especially with the outbreak of the war. To mitigate exchange rate fluctuations and provide the necessary liquidity for the continued orderly functioning of the markets, the Bank of Israel took several measures[33], including selling up to $30 billion in foreign currency

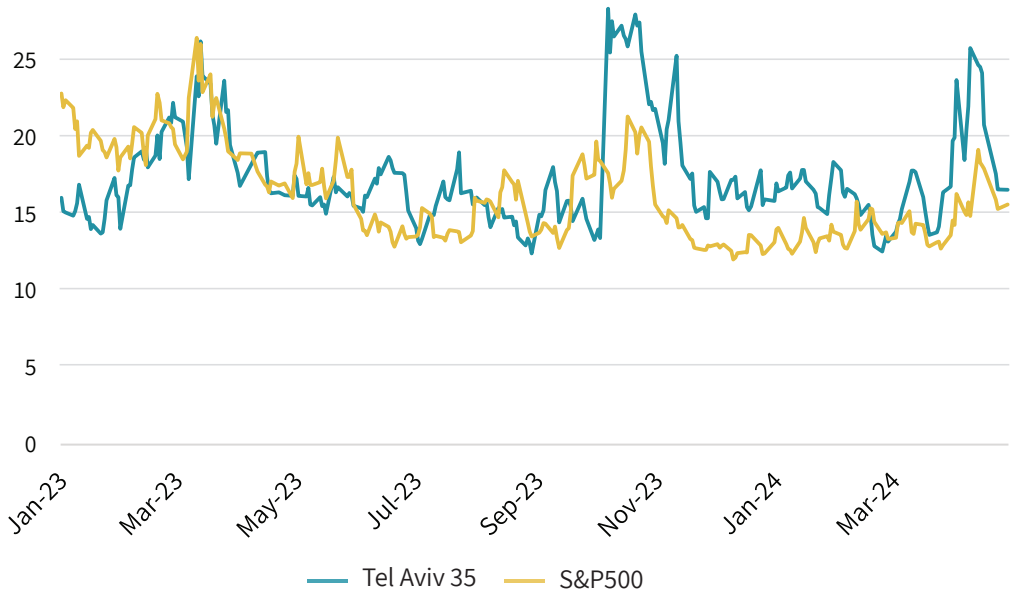
[32] Moody's rating agency announced on Friday, February 9th, 2024 that it is lowering the credit rating on Israel's debt from A1 to A2 as well as a negative rating outlook. S&P announced on Thursday, April 18th, 2024 that it is lowering Israel's credit rating from AA- to A+.

[33] For the activity of the Bank of Israel in the foreign currency market see https://www.boi.org.il/en/communication-and-publications/press-releases/a09-10-23/

and implementing swap transaction mechanisms of up to $15 billion. In addition, the Bank of Israel implemented a targeted monetary program to ease credit conditions for small and micro businesses affected by the war, in the amount of up to NIS 10 billion.[34]

The CFR fell during the second half of the year until October, when it began to rise as a result of the increase in retail and small business deposits.

Figure 5.48 Volatility Index* (VIX), January 2023–April 2024



* Determined by calculating the implied volatility of options traded on the S&P 500 and those traded on the Tel Aviv 35.
SOURCE: Bank of Israel data.

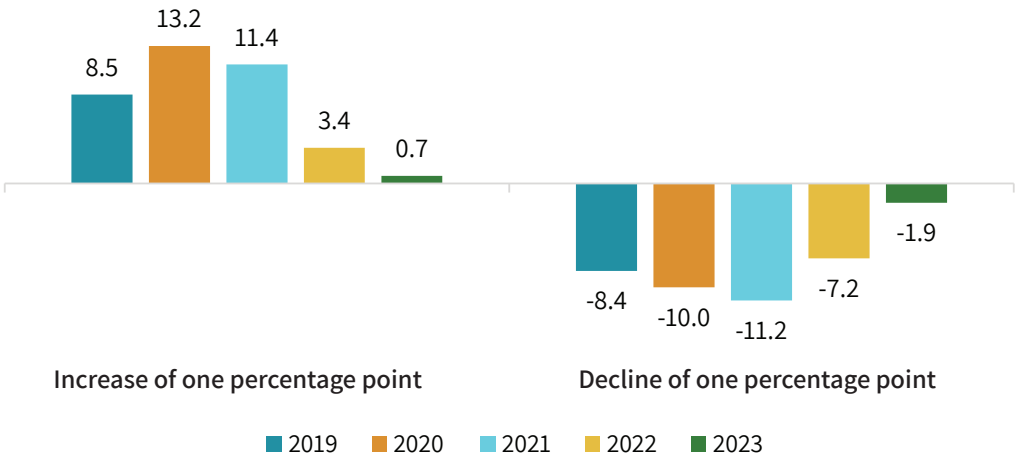
[34] The Bank of Israel announced a focused monetary program to ease credit conditions for small and miniature businesses who were affected by the war.
https://www.boi.org.il/en/communication-and-publications/press-releases/a06-11-23/

a. Exposure to interest rate risk[35]

According to the earnings approach, which examines the impact of interest rate changes on expected earnings over a twelve-month period, the banking system is exposed to a decline in interest rates. However, the impact of a parallel decrease in interest rates diminished during 2023 as compared to the end of 2022. The rate of potential losses within total income[36] under this scenario decreased by approximately 5.3 percentage points compared to 2022 (Figure 5.49). This reduction is due to both the continued growth in bank revenues (net profit of NIS 25.8 billion in 2023, and NIS 24.3 billion in 2022; for further details, see Chapter 3.1 in this survey) and a decrease in the total potential loss from a scenario of falling interest rates as compared to the end of 2022 (the total potential loss in 2023 was approximately NIS 4.7 billion as compared to NIS 5.4 billion in 2022). The reduction in the total loss is partly due to the update of the banks' internal models for calculating sensitivity to interest rate changes. This update was prompted by changes in the interest rate environment and the shift of funds from non-interest-bearing current accounts to interest-bearing deposits (for more details, see Chapter 2 of this survey).

There was a decline in sensitivity to changes in income that are the result of potential changes in the interest rates.

Figure 5.49 **Effect of Changes in the Interest Rate on Interest and Noninterest Income, as a Share of Total Interest and Noninterest Income, Total Banking System, 2019–2023** (percent)



SOURCE: Based on published financial statements.

[35] Interest rate risk (without a credit risk spread) is the risk to the banks' equity and profit as a result of the effect of interest rate volatility on the positions of each bank. When interest rates change, the current value and timing of their future cash flows change as well. This, in turn, causes the underlying value of assets, liabilities, and off-balance-sheet items to change, thereby impacting the bank's economic value. Changes in interest rates also have an effect on a banking corporation's profit by affecting its income and expenses that are sensitive to interest rates, which in turn affects the bank's net interest income (NII). Excessive interest-rate risk can pose a significant threat to a banking corporation's current capital base and/or future earnings if not managed appropriately.

[36] Interest income and noninterest financing income.

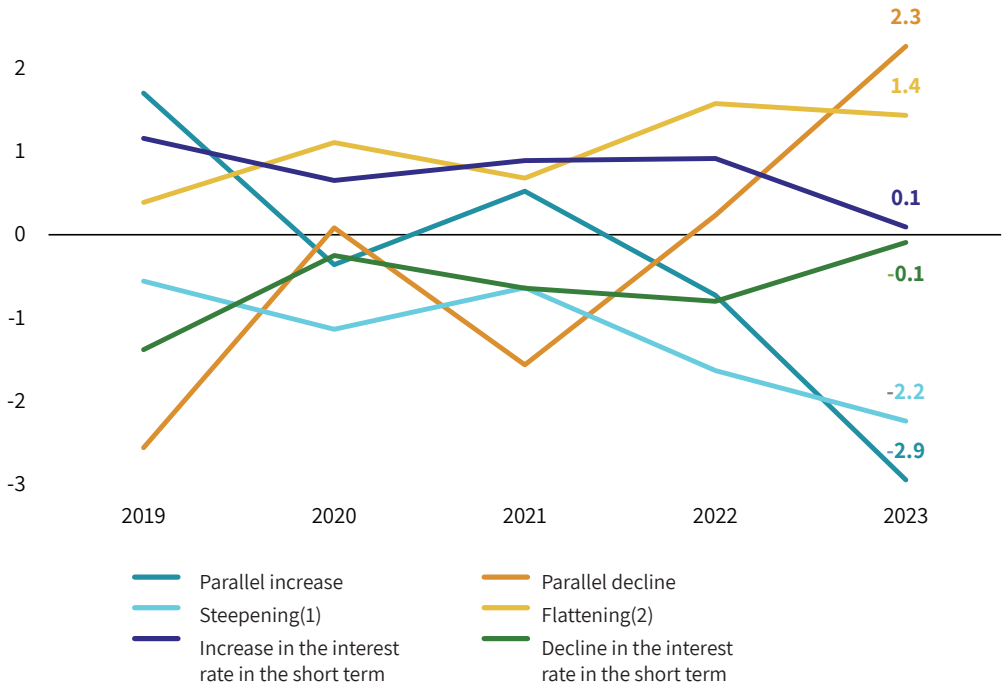
The **fair value approach,** which is used to estimate interest rate risk over a period of longer than a year, focuses on the impact of various scenarios of changes in the risk-free market interest rate on the fair value of a bank's assets, liabilities, and off-balance sheet positions. **The most significant risk for the banking system is a parallel increase of one percentage point (Figure 5.50), which is in contrast to 2022, when the highest sensitivity was to the steepening-of-the-curve scenario.**[37] The change in net adjusted fair value[38] relative to Tier 1 capital due to a parallel increase scenario was -2.9 percent at the end of 2023, compared to -0.7 percent at the end of 2022, and -1.6 percent under the steepening scenario at the end of 2022. Unlike the sensitivity analysis according to the earnings approach, the total absolute losses increased, standing at approximately NIS 5.2 billion under the steepening scenario at the end of 2023, compared to NIS 2.6 billion at the end of 2022. The change in sensitivity to the steepening scenario and the extent of the potential impact compared to 2022 is due to several factors, the main one being the shift of funds from non-interest-bearing current accounts to interest-bearing deposits. This shift resulted in an increase in the surplus of assets over liabilities for periods of longer than one year at the expense of the surplus of assets over on-demand up-to-one-year liabilities (Figure 5.51) and a shortening of the liability duration in the banks' balance sheets (0.9 years at the end of 2023 compared to 1.04 years at the end of 2022). This was partly due to the update of internal models by some banks with regard to the distribution of current accounts during the course of the year, which led to increased sensitivity to a scenario of a parallel interest rate increase.

[37] The steepening scenario is characterized by a drop in the short-term interest rate alongside an increase in the medium-term and long-term interest rates.

[38] Net fair value of financial instruments, apart from nonfinancial items and after the effect of liabilities for workers' compensation and smooth out over the periods of on-demand deposits.

The largest risk to the banking system is the scenario of a parallel increase.

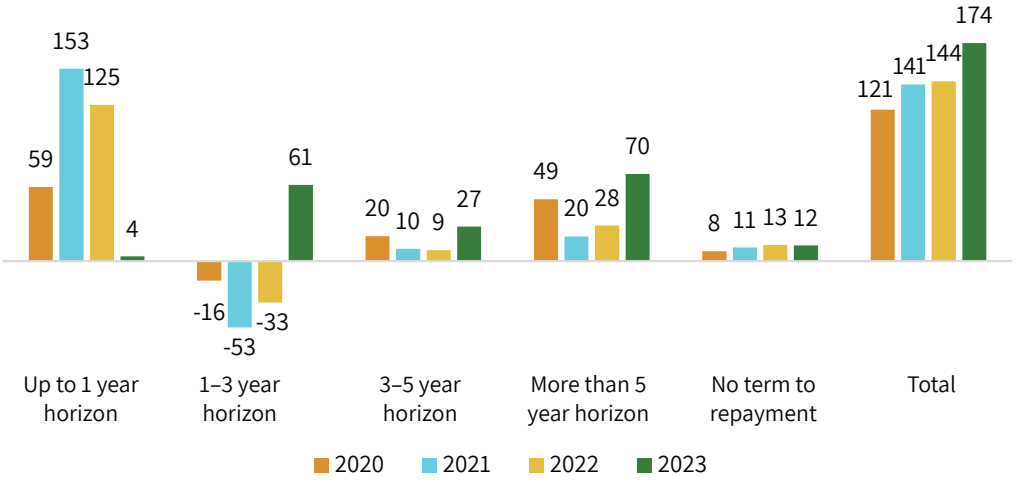
Figure 5.50 Change in the Net Adjusted Fair Value Resulting from Various Interest Rate Change Scenarios Relative to the Tier 1 Capital Ratio, Total Banking System, 2019–2023 (percent)



a Steepening - a short-term decline in the interest rate and a long-term increase in the interest rate.
b Flattening - a short-term increase in the interest rate and a long-term decline in the interest rate.
SOURCE: Based on reports to the Banking Supervision Department.

There is a surplus of asset at all maturities.

Figure 5.51 Surplus of Financial Assets Over Financial Liabilities, Total Banking System, 2020–2023 (NIS billion)



SOURCE: Based on published financial statements.

b. Indexation risk

The banking system's exposure to the CPI continued to increase during 2023. The exposure ratio to the index relative to Tier 1 capital[39] stood at approximately 65 percent at the end of 2023, as compared to around 60 percent at the end of 2022 (Figure 5.52). In addition, the net exposure rate to the index (after the impact of derivative instruments) grew from 53.3 percent at the end of 2022 to 60 percent at the end of 2023. However, the effect of a decrease in the inflation rate relative to Tier 1 capital decreased by 3.3 percentage points during 2023 (Figure 5.53), despite the increase in the total potential loss (NIS 3.2 billion, an increase of about NIS 670 million compared to 2022). This reduction can be attributed to the high profitability of the system during the year, which resulted in a 12.3 percent increase in the banking system's Tier 1 equity capital (for further details, see Chapter 4 of this survey).

There was an increase in the exposure to the CPI in parallel to a decline in the potential effect of the CPI on Tier 1 capital, as a result of the strengthening of equity during the year.

Figure 5.52

Exposurea to the CPI Relative to Tier 1 Capital, Total Banking System, 2019–2023 (percent)

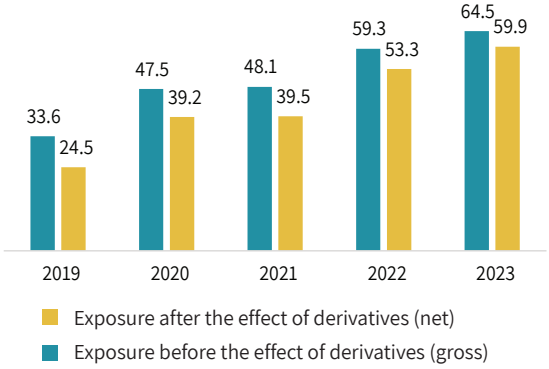
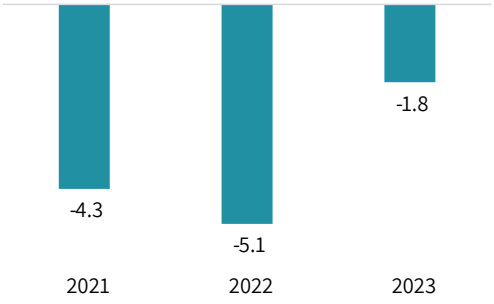


Figure 5.53

Effect of a 3 Percentage Point Decline in the Consumer Price Index on the Tier 1 Capital Ratio, Total Banking System, 2021–2023 (percent)



a Difference between assets and liabilities.

SOURCE: Based on published financial statements.

c. Foreign currency

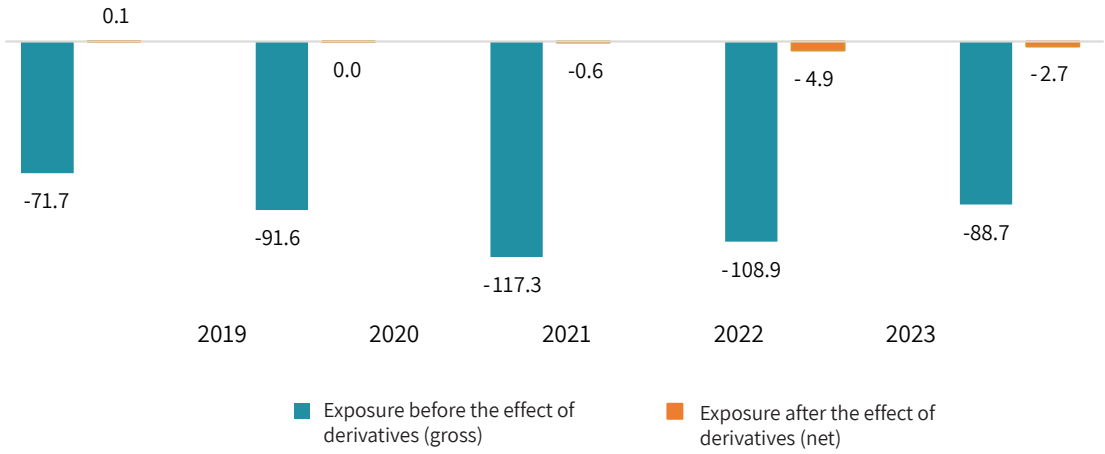
In the foreign currency sector, the banking system has an excess of liabilities over assets, with largest exposure in US dollars. This gap narrowed by approximately NIS 5 billion during 2023 and now stands at about NIS -158 billion, which is equivalent to approximately -89 percent relative to Tier 1 capital, as compared to -109 percent in 2022 (Figure 5.54). This could lead to significant losses for the banks in a scenario where the shekel weakens against foreign currencies, which

[39] The rate of exposure is calculated as the difference between CPI-indexed assets and liabilities.

would increase the banks' liabilities and decrease their capital. However, banks hedge their foreign currency exposure through derivative activities, resulting in a very low net exposure. This is evident in the net exposure to the exchange rate relative to Tier 1 capital (-2.7 percent at the end of 2023 as compared to -4.9 percent at the end of 2022).

There was a decrease in exposure to the exchange rate during the year.

Figure 5.54 **Exposurea to the Exchange Rate Relative to Tier 1 Capital, Total Banking System, 2019–2023** (percent)



a Difference between assets and liabilities.
SOURCE: Based on published financial statements.

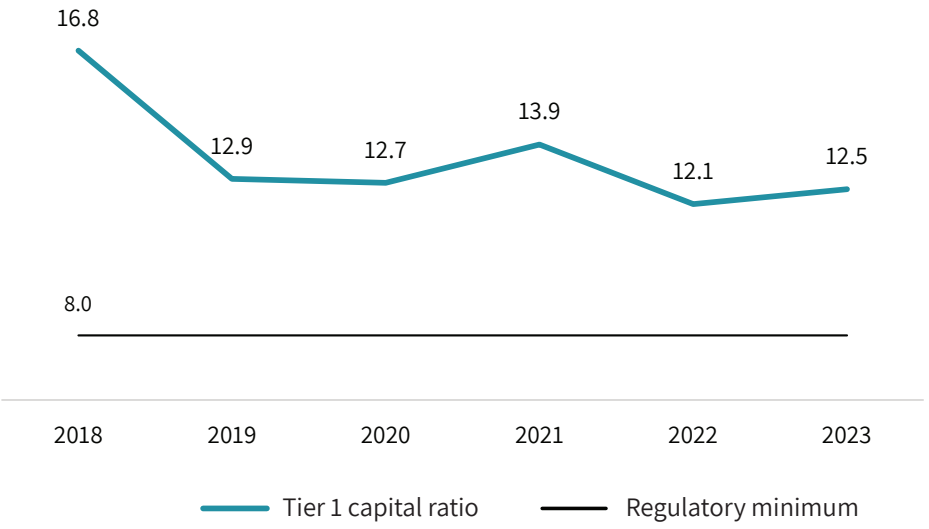
5. THE CREDIT CARD COMPANIES

a. Capital adequacy

The Tier 1 capital ratio of the credit card companies remains high (12.5 percent at the end of 2023, as compared to 12.1 percent at the same time last year) and exceeds the required regulatory threshold of 8 percent (Figure 5.55). In the case of CAL and MAX, the ratio increased due to faster growth in Tier 1 equity relative to the growth in risk-weighted assets. In the case of Isracard, the ratio remained unchanged due to similar growth rates in the ratio components.

The Tier 1 capital ratio remains stable.

Figure 5.55 Tier 1 Capital Ratio, Credit Card Companies, 2018–2023 (percent)



SOURCE: Based on published financial statements of the credit card companies.

b. Credit card activity

Credit card activity (both bank and nonbank credit cards) constitutes the core activity of credit card companies and also their main revenue source. The activity is divided into two main sectors: acquiring and issuing. The acquiring segment includes the company's operations as an acquirer, in which it credits businesses for credit card transactions in exchange for a fee. As part of the companies' activities in this segment, they offer additional services to the businesses, such as providing credit, financial solutions such as voucher discounting, advance payments, guarantees, and other complementary products. In the issuing segment, which includes the operation of bank credit cards and the issue of nonbank credit cards, the companies manage and issue charge cards to individuals, business customers, and merchants, which are used as a means of payment both domestically and internationally. The main revenues in this sector come from fees charged to cardholders, fees from credit card companies that acquire them (cross fees), and fees from international organizations for overseas transactions. In this sector as well, credit card companies offer their customers various credit products such as credit transactions, revolving credit, and consumer and business loans.

In 2023, the number of active credit cards in Israel reached approximately 11 million, continuing the upward trend in the number of both bank and nonbank cards (Figure 5.56). The faster growth in the number of nonbank cards relative to bank cards is accompanied by a more rapid increase in the volume of transactions conducted with these cards (Figure 5.57). The rapid growth rates in nonbank cards, both in the number of cards and in transaction volumes, can be attributed to several developments, including credit card companies' efforts to expand their customer base

and increase revenues from issuing nonbank cards, customer preferences, and from a broader perspective of trends in recent years, the influence of the implementation of the Strum Reform regarding the reduction of credit lines on credit cards issued by Bank Hapoalim and Bank Leumi. However, the majority of cards (approximately 63 percent) are still bank cards, and most transactions (around 72 percent) are conducted with them (Figure 5.58).

Bank credit cards constitute the majority of active credit cards in Israel; however, the volume of transactions in nonbank cards is growing at a faster rate.

Figure 5.56

Number of Active Cards at the Credit Card Companies, 2020–2023 (million)

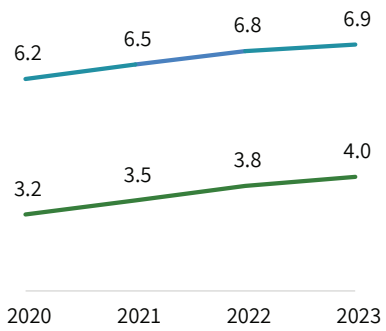
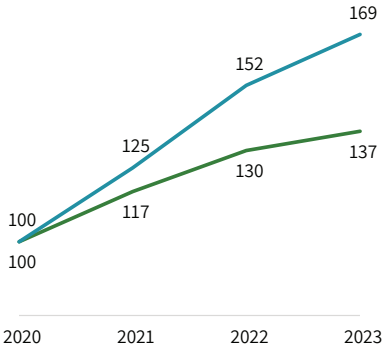


Figure 5.57

Annual Bank and Nonbank Credit Card Transaction Volume, 2020–2023
(index: December 2020=100)



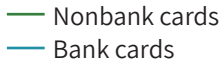
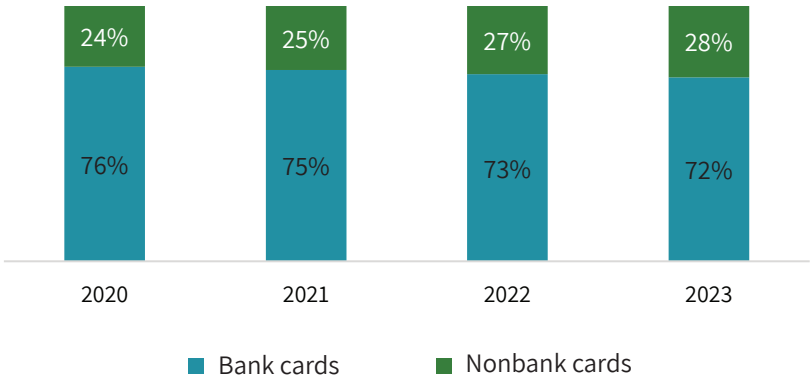


Figure 5.58

Distribution of Credit Card Transaction Turnover, by Card Type, 2020–2023 (percent)



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

c. Profitability

The aggregate net profit of the credit card companies grew by approximately 30 percent relative to 2022, reaching NIS 920 million by the end of 2023 (Figure 5.59). About half of that can be attributed to activities in the acquiring segment, one quarter to activities in the issuing sector, and the remaining quarter to "others", which is due to a one-time windfall recorded by one of the companies.[40] It is worth noting that despite the continuing decrease in the acquiring fee, the profit from this segment continues to rise, partly due to the ongoing increase in credit card transaction volumes. Various factors moderated the increase in profitability, with the main ones being the rise in credit loss provisions and the reduction in income. The reduction in income was due to several factors: a decrease in income from service fees[41] as a result of the assistance programs; a decrease in fees from overseas credit card transactions; a reduction in income from cross-fees due to a slowdown in activity in the affected sectors; and a decline in acquiring income. The return on equity of the credit card companies stood at 13.2 percent in 2023, as compared to 11 percent in the same period last year (Figure 5.60). The main part of the increase is due to a significant increase in net profit, which was mainly driven by the high interest rate environment throughout 2023, as compared to a more moderate increase in equity.

Profitability continued to improve this year, despite the macroeconomic environment and the Swords of Iron War.

Figure 5.60

Return on Equity (ROE) of the Credit Card Companies, 2018–2023 (percent)

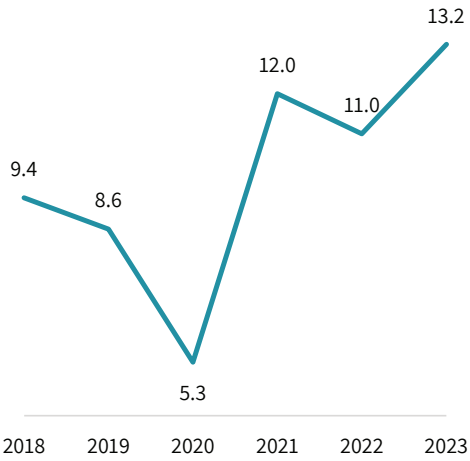
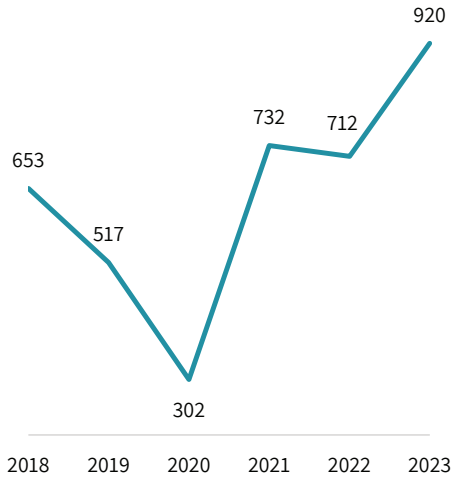


Figure 5.59

Credit Card Companies' Net Profit Attributed to Shareholders, 2018–2023 (NIS million)



SOURCE: Based on published financial statements of the credit card companies.

[40] Cal recorded a one-time profit that was the result of, among other things, the sale of a building which brought in NIS 227 million in revenues.

[41] Service fees are collected from cardholders and businesses.

d. Credit

The credit portfolio of the credit card companies grew in 2023, with consumer credit increasing by approximately 12.5 percent and commercial credit by about 23 percent. There was a deterioration in the quality metrics of both consumer and commercial credit, partly due to the implementation of the CECL rules at the beginning of 2023, leading to a one-time increase in provisions, and partly due to increased risk in the portfolio given the macroeconomic environment and the impact of the war. Furthermore, there was an increase in the coverage ratio[42], indicating that the provision rate grew more than the rate of problematic credit, suggesting a higher coverage capacity against potential future defaults.

Consumer Credit

Consumer credit provided by the credit card companies includes a variety of interest-bearing credit products and in particular other consumer credit, revolving credit[43], and vehicle-secured loans. As of the end of 2023, other consumer credit constituted the largest share, accounting for about 65 percent of the consumer credit portfolio. Revolving credit accounted for about 22 percent, and vehicle-secured loans made up approximately 13 percent.

The consumer credit portfolio of the credit card companies grew by approximately 12.5 percent (about NIS 2.7 billion) during 2023, reaching around NIS 24 billion at the end of the year (Figure 5.61). This compares to an increase of about 32 percent (around NIS 5 billion) during 2022. Among the various credit products, other consumer credit grew by about 12 percent, revolving credit by 8 percent, and vehicle-secured loans by about 25 percent (a high rate relative to its share). It is noteworthy that the growth rate of the consumer credit portfolio of the credit card companies was higher than in the case of the banks, which actually experienced a negative growth rate in 2023 (for more details, see Chapter 5.2 of this survey). Consequently, by the end of 2023, the share of credit card companies in total consumer credit provided by the banking system increased to 23 percent, as compared to 21 percent at the end of 2022 and 17 percent at the end of 2021.

Credit quality

During 2023, there was a deterioration in the credit quality metrics of the credit card companies for individuals. The share of troubled credit within total credit increased by about 30 percent, standing at approximately 5.8 percent at the end of 2023, as compared to around 4.5 percent at the end of 2022. The rate of provision for credit losses within total credit rose significantly, reaching 3.1 percent in 2023 as compared to 1.3 percent in 2022. It is noteworthy that the credit loss provisions rate at the end of 2023 was similar to its level at the end of 2020, due to the COVID-19 crisis. Accordingly, the rate of the allowance for credit losses within total credit to individuals also increased, reaching approximately 4.9 percent at the end of 2023, compared to around 3 percent at the end of 2022 (Figure 5.62).

[42] The ratio of the credit loss provision to total problematic debt.

[43] When a credit card is used, the credit arrangement for the cardholder's usage is predetermined. On the monthly date of redemption, the cardholder can choose to redeem only part of the debit amount and the rest can be deferred to the following month. The customer will pay interest for this revolving credit.

The increase in the allowance for credit losses in 2023 stems from several factors whose effect varied over the course of the year, as explained below. Starting in January 2023[44], credit card companies began implementing the CECL rules, which accelerate the recognition of credit losses expected over the life of a loan. According to disclosures included in the financial reports of the credit card companies, the initial implementation of these rules resulted in a one-time increase in the allowance for credit losses of NIS 61 million, accounting for approximately 0.3 percentage points of the increase in the rate of credit loss allowance within total credit to the public. In addition, the macroeconomic environment, particularly the interest rate hikes in the first half of the year, and the uncertainty in the economy, especially regarding the stability of borrowers and their ability to meet credit repayments due to the Swords of Iron War, contributed to the increase in the expense rate. Furthermore, the volume of write-offs doubled, explained by the increased risk in the portfolio and the refraining from collection from customers due to the war.

Commercial credit

The main commercial credit products offered by credit card companies include loans to businesses and commercial customers for various durations, which constitute the primary component of their portfolio, in addition to voucher discounting. The commercial credit portfolio of the credit card companies grew by approximately 23 percent during 2023, reaching NIS 4.2 billion, as compared to growth of around 44 percent in 2022, when it stood at NIS 3.4 billion (Figure 5.61). It is noteworthy that the commercial credit portfolio of the credit card companies represents less than 1 percent of the total commercial credit in the banking system.

Credit quality

During 2023, there was a deterioration in the quality of commercial credit. The rate of troubled credit increased, alongside a rise in the net write-off rate, although these amounts were negligible. Additionally, there was a significant increase in credit loss provisions for commercial credit, with the expense rate for this type of credit reaching approximately 2 percent of the commercial credit portfolio, as compared to 0.1 percent in 2022.

[44] Starting in January 2022, the banking corporations have implemented new rules regarding provisions called Current Expected Credit Losses (CECL). This arrangement went into effect among the credit card companies starting from January 2023.

Alongside the growth in the credit portfolio, there was an increase in the portfolio's risk, as can be seen in the lower credit quality indices.

Figure 5.62

Problematic Credit, Loan Loss Provisions, and Outstanding Credit Loss Allowances, as a Share of Total Credit to Private Individuals, 2019–2023 (percent)

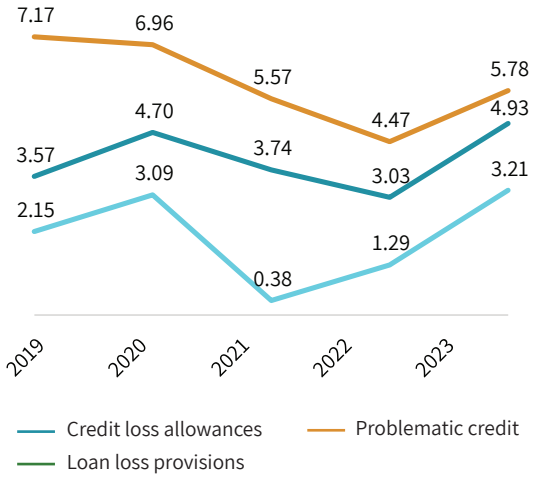
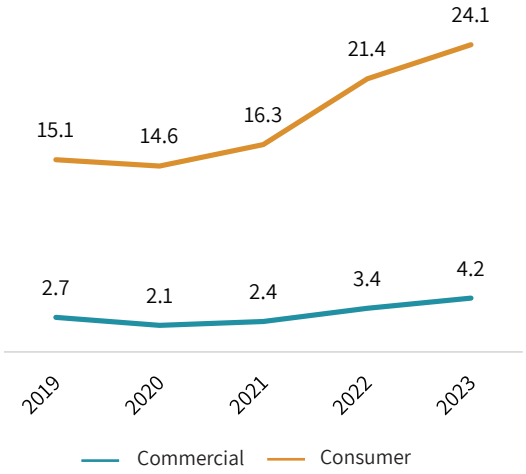


Figure 5.61

Consumer and Commercial Credit, Credit Card Companies, 2019–2023 (NIS billion)



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

6. INFORMATION TECHNOLOGY RISK

Information technology constitutes the central infrastructure of a banking corporation's business activities. Banking corporations increasingly rely on technology to meet the various challenges they face in a competitive market. The banking corporation's systems provide services to its various business lines and to the general public, and they are connected to third parties. Among other things, the role of technology is to create the appropriate linkage between infrastructures, systems, and other relevant components, in a way that best supports the provision of existing products and services and the offering of new ones. Accurate information, provided in a timely and secure manner, is critical to meeting the business requirements of a banking corporation.

Alongside its advantages, technology exposes the banking corporation to a wide range of risks due to breaches of confidentiality, failures in the integrity of information assets, inappropriateness or unavailability of an information asset[45] or the inability to modify the information technology setup within a reasonable time and cost when the environment or business requirements change. These risks are grouped together under the name information technology risk.

[45] Information and technological infrastructure, including data.

Information technology risk can pose a significant threat to the stability of a banking corporation and its very existence. Therefore, the Banking Supervision Department believes that proper management of information technology risks is fundamental to achieving the strategic, corporate, and operational goals of a banking corporation. Accordingly, it is expected that a banking corporation will adequately protect its information assets and assimilate an organizational culture that promotes the management of the information technology risks to which it is exposed.

Information technology risks are part of the family of operational risks and include information security risks, which include cyber risks. Therefore, information technology risk management is necessary in order to comply with the Proper Conduct of Banking Business Directives issued by the Banking Supervision Department that deal with risk management in general and operational risk management in particular. On the other hand, its unique characteristics require dedicated and specific risk management that, among other things, emphasizes management of information security risks, including cyber risks.

It should be noted that the taxonomy considers cyber risk management to be an integral part of managing all the information security risks faced by a banking corporation. However, it should be noted that cyber attacks have specific characteristics that a banking corporation should take into account in ensuring that they are handled correctly.

At the outbreak of the Swords of Iron War, all of the banking corporations switched to emergency mode, which included, among other things, the activation of a situation room, emergency reporting to the Bank of Israel as necessary, transitioning to remote work, checking backup facilities, and preparing for escalation scenarios. The technology divisions in the banking corporations were required to quickly assimilate loan and mortgage schemes into the banking systems in order to provide a solution to affected customers.

The technological human resource risk, which was a significant risk to the banking system in 2021 and early 2022, has significantly declined in most technology areas as a result of transformation in the market. It should be noted that banking corporations still struggle to recruit employees in highly demanded fields, but these are unique niches that do not have a significant impact on the overall human resource risk.

A large part of the banking system is currently in various stages of upgrading core systems. Banking corporations that have in recent years initiated projects to upgrade their core systems are continuing to progress, while making adjustments along the way. At the same time, and following the amendment made to Proper Conduct of Banking Management Directive 362 in June 2022, which allows the transfer of all types of systems to the cloud, subject to certain principles and professional requirements, some banking corporations have begun exploring the possibility of transferring part of their core systems to the cloud.

Banking corporations continue to expand the assimilation of agile methodology in managing and developing projects, in light of the improvement in **Time To Market (TTM).** The main risk in this methodology arises from the need to adapt controls to the new process.

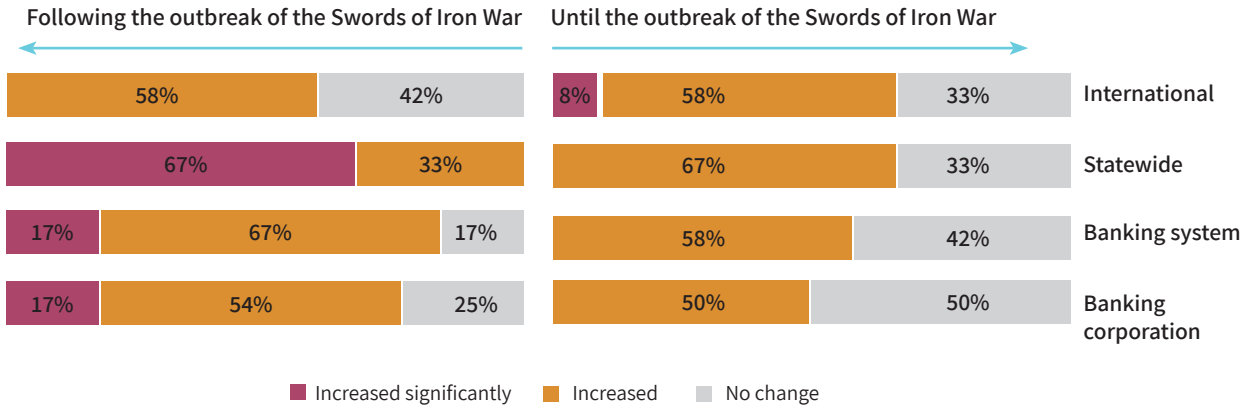
7. CYBER RISK

In 2023, the level of the cyber threat remained high both in Israel and other countries. Organizations worldwide, including those in the financial sector, experienced an increase in the frequency and sophistication of cyber attacks, along with supply chain attacks, ransomware and extortion incidents, data leaks, and high-intensity Distributed Denial of Service (DDoS) attacks. For example, the FBI reported that in 2023[46], the reports it received indicated that total damage from cyber attacks in the US amounted to $12.5 billion, which represents an increase of approximately 20 percent over 2022.[47] Nonetheless, global developments were not exceptional compared to trends observed in recent years.

In Israel, against the backdrop of the Swords of Iron War and its implications for the Israeli cyber domain, there was a significant increase in cyberattacks, which included some major incidents. Notable events included attacks on healthcare and academic institutions, the Israel Post systems, and a web hosting company for major Israeli companies. A survey conducted by the Banking Supervision Department among CISOs (Chief Information Security Officers) in the banking system[48] revealed that most had already identified some increase in cyber risk in 2023 compared to 2022, and after the outbreak of the war, there was a significant worsening in the level of risk, particularly at the national level, but also within the banking system and within banking corporations.

Following the outbreak of the Swords of Iron War there was an increase in the level of cyber risk.

Figure 5.63 Results of the Banking Supervision Department survey among Chief Information Security Officers in the banking system—"Have there been developments in the various cyber spheres?" (Share of respondents who chose the options as noted)



[46] Internet Crime Report 2023.

[47] The report notes that despite the "impressive" data, they estimate that the extent of cybercrime in 2023 is higher than reported, given that the FBI's infiltration of the Hive ransomware group's infrastructure revealed that only about 20 percent of its victims reported to law enforcement authorities.

[48] Since 2021, the Banking Supervision Department Cyber Unit has been distributing a comprehensive questionnaire at the beginning of each year among cybersecurity managers in the banking system. The goal of the questionnaire is to analyze the development of cyber threats during the past year and to anticipate future trends. The questionnaire, which is usually filled out in collaboration with risk management representatives specializing in cyber, helps to form an up-to-date picture of the development of cyber risks.

This is also reflected in the National Cyber Directorate's 2023 report, which indicates a 43 percent increase in cyber incident reports as compared to 2022. Of these reports, about 68 percent of incidents were reported during the war. According to the National Cyber Directorate, cyberattacks intensified gradually during the Swords of Iron War, shifting from information theft to causing disruption and damage. Initially, the attacks were simple and unsophisticated, mainly aimed at creating public noise, but over time they became more focused and aimed at causing real disruption to organizations. The attacks targeted critical organizations and were designed to create a wide-ranging effect by targeting companies considered to be part of the supply chain for many organizations in the economy. As the war continued, more attack groups, operating on behalf of Iran and Hezbollah, were identified and they are carrying out cyberattacks in parallel to the fighting.

In 2023, there were no significant cyber and information security incidents in the banking system. Throughout 2023, the Banking Supervision Department monitored the handling of 21 cyber incidents (including suspected incidents) in the banking system, compared to 15 in 2022. A survey conducted by the Banking Supervision Department among cybersecurity managers in the banking system revealed that after the outbreak of the Swords of Iron War there was an increase in attempted attacks compared to 2022, mainly in the form of DDoS attacks, though there was no significant change in the overall number of cyber incidents or the actual level of damage.

With the outbreak of Iron Swords and the fear of the conflict expanding into the cyber arena, the Banking Supervision Department intensified its activities within the banking system, including continuous monitoring of attack attempts and cyber incidents, issuing a daily situation report, and sharing information with relevant parties. Additionally, the Department instructed the banking system to reinforce its defenses against cyber incidents and eased regulatory requirements wherever possible in order to allow the banking system to focus on addressing the threat.

In 2023, there was an upward trend in social engineering-based cyber fraud and the damage caused by such fraud as compared to 2022. The risk survey conducted by the Banking Supervision Department among senior executives in the banking system and credit card companies revealed that respondents believe that the most relevant risks to the banking system in the cyber domain are social engineering-based cyber incidents targeted at customers and denial-of-service incidents. The Banking Supervision Department attributes major importance to combating financial fraud and is actively working on the issue (see Chapter 6 of this survey for further details).

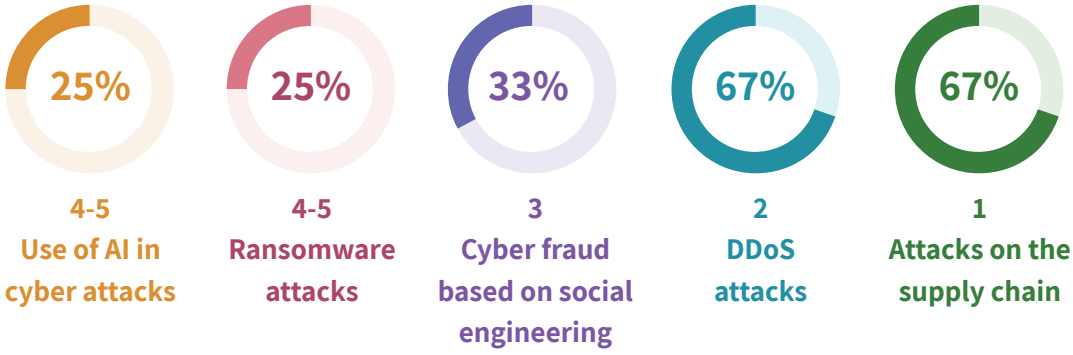
It is believed that the level of cyber risk will remain high in 2024 and that the trends that have characterized recent years will continue. Based on attack patterns in recent years, we anticipate an increase in attacks, in terms of both their scope and the sophistication of the attackers. Attackers are expected to exploit both known and unknown vulnerabilities, quickly turning them into attacks. We also expect a continued increase in supply chain attacks, denial-of-service attacks, and attempts at cybercrime, including an increase in fraud attempts. Looking forward, we anticipate that the significant technological developments in artificial intelligence, machine learning, and eventually quantum computing will also be exploited by attackers. According to the National Cyber

Directorate[49], 2024 is expected to be marked by continued conflict and readiness for its expansion into additional arenas, alongside improvements in cyber capabilities and attackers' willingness to carry out attacks that cause harm to the home front.

Findings from the Banking Supervision Department's survey of CISOs in the banking system also indicate that the threat level will remain high, with the continuation of trends that have characterized recent years. CISOs expect that the main incidents will focus on supply chain attacks, DDoS attacks, and social engineering-based financial fraud (Figure 5.64).

The expected events will primarily focus on attack of the supply chain, DDoS attacks and financial fraud based on social engineering.

Figure 5.64 Results of the Banking Supervision Department survey among Chief Information Security Officers in the banking system—"In you view, what will be the main trend of cyber events in 2024 on the banking system?" (Share of CISOs who chose the options as noted)



In addition, changes in the banking system's work plans will lead to further expansion of attack surfaces and increased digital connectivity, partly due to the acceleration of innovative business processes and technological and digital initiatives. These processes are expected to include the adoption of new technologies, expanded use of data, and a significant increase in the use of cloud technologies. There will also be increased use of API interfaces and growth in third-party and artificial intelligence interfaces.

Globally, findings from the survey conducted by the World Economic Forum (WEF) in order to create a global cybersecurity outlook for 2024[50] highlight concerns about the impact of emerging technologies on cybersecurity in various sectors, especially generative AI. The survey found that about 56 percent of respondents from the banking industry believe that generative AI will significantly impact cybersecurity in the next two years.

[49] According to the Director of the National Cyber Directorate in its annual report for 2023.
[50] Global Cybersecurity Outlook 2024.

These findings align with the results of the risk survey conducted by the Banking Supervision Department among senior executives in banks and credit card companies, which identified cyber risk as the most concerning risk from the system's perspective for the sixth consecutive year. Accordingly, banking corporations and credit card companies continue to proactively prepare for cyber incidents and their fallout. This preparation focuses on protecting against advanced and persistent attackers, while continuously adapting defense mechanisms to new and evolving threats, both in prevention and early detection of incidents, alongside developing rapid response and recovery capabilities. These actions are intended to enable banking corporations to recover quickly and efficiently from cyber incidents while minimizing potential damage.

In addition, the Banking Supervision Department encourages banking corporations to continue cybersecurity efforts by continuously reducing their cyber risk profile and exposure to attacks, maintaining flexibility and constant adaptation, ongoing monitoring and continuous assessment of threats and opportunities, and adjusting defense efforts accordingly, as well as continually searching for possible weaknesses and vulnerabilities. Recognizing that complete prevention of cyber threats is impossible, banking corporations are expected to continue developing detection, response, and event management capabilities alongside their emphasis on prevention measures. This approach will enable the banking corporations to successfully handle challenges and threats in the cyber domain while maintaining organizational resilience.

Box. 5.1

Development of Credit in the Construction and Real-Estate Industry

- Balance-sheet credit from the five large banking groups to the construction and real-estate industry continued to grow vigorously (14 percent) in 2023, as before. This outcome was attained despite the increase in industry risk, particularly in view of the slowdown of housing-market activity, rising funding costs, and the effects of the Swords of Iron War.[1]
- The increase in industry risk was reflected in an upturn in the coverage rate of the credit-loss allowance relative to credit taken by the industry. This rate increased throughout the banking system by 0.5 percent in the course of 2023, ending the year at to 2.4 percent, mostly due to the effects of the war.

This box describes the developments in bank credit to the construction and real-estate industry parsed by the following activities:

- Credit for funding of land—the decrease in housing demand induced, inter alia, a decline in the success rate of land auctions and in winning prices in auctions successfully closed. Concurrently, the Banking Supervision Department demanded an additional capital allocation for high-leverage lending for land. These measures slowed the growth rate of credit for land financing relative to previous years.
- Residential construction loans—2023 saw a hefty 66 percent increase in financial credit for residential construction. The increase traced to the slowdown in sale of dwellings and occurred despite impediments to progress in construction when the war broke out.[2]
- Income-producing real estate—the share of high-LTV credit for income-producing office and commercial real estate increased in 2023, for reasons including oversupply in the market for office space in certain parts of the country. As for income-producing residential real estate, the increase in the interest environment and changes in taxation made activity in this field less worthwhile and some companies chose to put up for sale dwellings that had been rented out or that were intended for rental from the outset.
- Credit not secured by real estate—much of this credit is extended for the activities of performance contractors. The risk in financing performance contractors was high even before the war broke out; since then, performance contractors have been exposed to additional risks, particularly labor shortages and increases in costs of labor and raw materials.

[1] For elaboration on economic developments in the housing market, see the Bank of Israel Annual Report for 2023, Chapter 8, and "The Housing Market."

[2] Financial credit for housing construction loans purposes increased and the gap between construction costs related to progress in project performance and cash flow obtained from the sale of dwellings widened.

- Pursuant to the upturn in risk, the Banking Supervision Department is closely monitoring developments in credit to this industry and is acting to ensure that the industry's credit risks are monitored and managed in accordance with accepted and appropriate risk management practices.

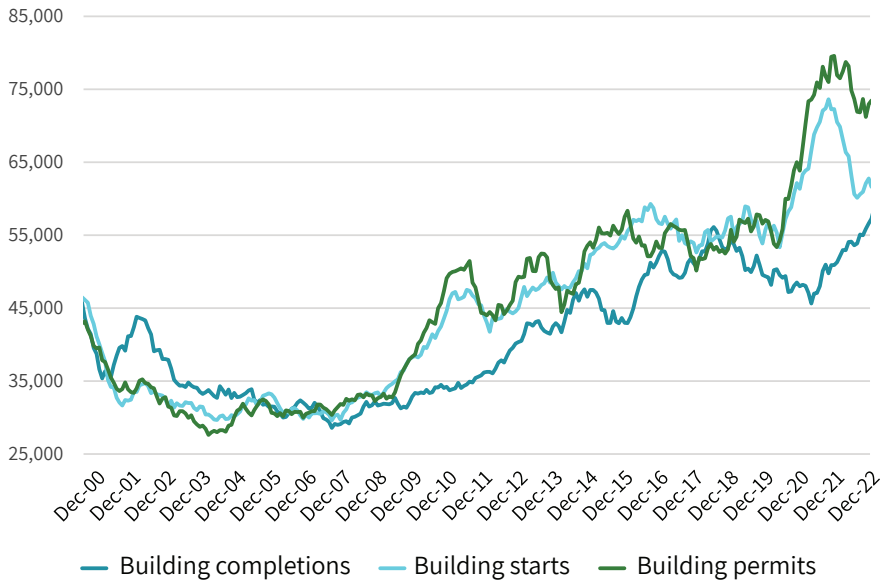
General remarks—main developments in the real-estate market

Demand for housing began to slacken in the second half of 2022 and did so more strongly in 2023, manifested in a decrease in the number of home purchase transactions in the course of 2023 (35 percent relative to 2022[3]), an increase in unsold new housing stock to 67,000,[4] a downturn in home prices (1.4 percent[5]) and a slump in mortgage performance (40 percent relative to 2022).

In the construction industry, activity slowed moderately relative to 2021–2022, both in housing starts and in issuance of building permits. Concurrently, housing completions increased (Figure 5.65).

Central Bureau of Statistics construction data indicate that the scope of permits, building starts, and building completions are relatively high, despite moderation of activity in the industry in the past year

Figure 5.65 Building Starts, Completions, and Permits, Annual, 2000–2023



SOURCE: Based on Central Bureau of Statistics data.

[3] Central Bureau of Statistics, "Real Estate Transactions—Dwellings in 2023," https://www.cbs.gov.il/he/mediarelease/DocLib/2024/047/04_24_047b.pdf

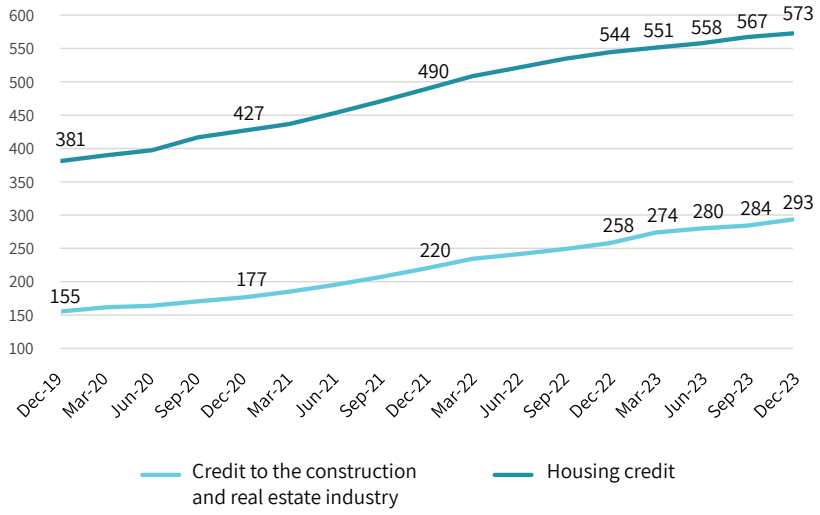
[4] Central Bureau of Statistics, "Real Estate Transactions— Dwellings in December 2023–February 2024," https://www.cbs.gov.il/he/mediarelease/DocLib/2024/113/04_24_113b.pdf

[5] Decrease in current prices, November–December 2023, monthly data against year-earlier.

The outbreak of the Swords of Iron War on October 7, 2023, occasioned a further decline in real-estate market activity. The moratorium on allowing Palestinian workers to enter Israel, placing much of the industry's labor force off-limits, brought activity in many construction sites to a halt. The labor shortage is a major problem in the industry at the present writing[6], having an upward effect both on construction costs and on progress in performance. Due to the effects of the war, the Banking Supervision Department instructed the banking corporations to be lenient with borrowers, including those in the construction and real-estate industries, as part of the policy of leniency toward borrowers that the Bank of Israel and the government adopted.[7] The five large banking groups' balance-sheet credit (liabilities) to the construction and real-estate industry increased by a solid 14 percent in 2023 and came to NIS 293 billion (Figure 2). The annual growth rate is representative of the trend of rapid growth in credit to this industry in recent years. The upturn in lending to the industry occurred against the background of slowdowns in housing-market activity and home sales along with rising funding costs.

The growth rate of credit to the construction and real estate industry and credit of for housing

Figure 5.66 **Balance-Sheet Credit (Debts) to the Construction and Real Estate Industry, and Housing Credit, Israeli Borrowers, the Five Large Banking Groups, 2019–2023** (NIS billion)



SOURCE: Based on reports to the Banking Supervision Department.

[6] For elaboration, see box in the Bank of Israel Annual Report for 2023, "Employment of Israeli Workers in View of the Swords of Iron War."

[7] For elaboration, see Box 2 in Chapter 6 of Israel's Banking System, Survey for 2023.

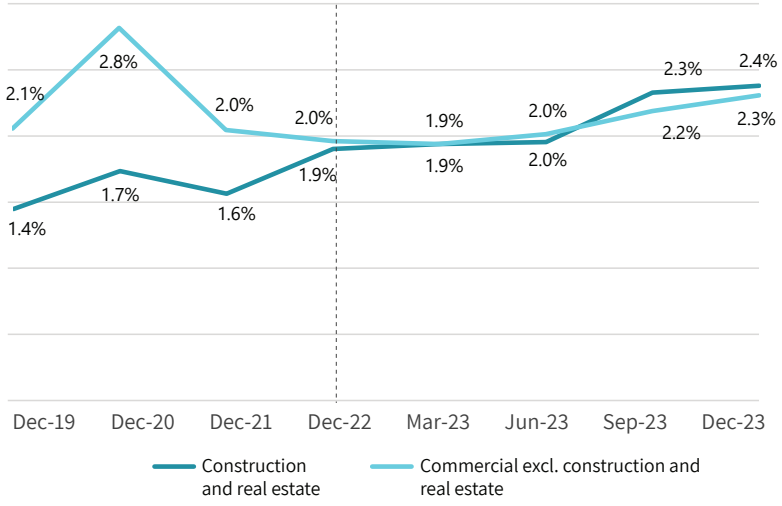
The credit risk of the construction and real-estate industry increased during the year and particularly after the war began, as is also reflected in the credit-quality indices. After several years of boom in the Israeli housing market, manifested in record numbers of home-purchase transactions, home prices increased as did prices of land marketed at this time, particularly in 2021–22. The surge was accompanied by rapid growth in outstanding credit and the risk characteristics of loans taken at this time, particularly in terms of loan-to-value (LTV) ratios.

Pursuant to the upturn in risk, the Banking Supervision Department has been closely following developments in credit to this industry and is acting to ensure that the industry's credit risks are monitored and managed in accordance with accepted and appropriate risk management practices.

The increase in industry risk is reflected in upward movement of the coverage rate[8] of the credit-loss allowance relative to industry credit. Thus, the share of credit-loss allowances in total credit (liabilities) of the five large banking groups to this industry came to 2.4 percent at the end of 2023 as against 1.9 percent year-earlier (Figure 5.67).

The share of credit loss allowance in the construction and real estate industry is on an upward trend

Figure 5.67 **Credit Loss Allowance as a Share of Balance-Sheet Credit (Debts) in Construction and Real Estate, and as a Share of Commercial Credit Excluding Construction and Real Estate, Activity in Israel, the Five Large Banking Groups, 2019–2023** (percent)



SOURCE: Based on published financial statements.

[8] The coverage rate reflects the ratio of the credit-loss provision to outstanding balance-sheet credit (liabilities).

Below, credit to the construction and real-estate industry is reviewed by main areas of activity that represent, among other things, main activities and various stages of the building process: buying land, residential real estate under construction; income-producing real estate, and other credit (credit unsecured by specific property).

Table 5.1 | **Development of outstanding balance-sheet credit to the construction and real-estate industry in Israel (NIS billion)**

Component	Balance-sheet credit risk			
	12/2023		12/2022	
	NIS billion	Pct.	NIS billion	Pct.
Land	101	34%	94	36%
Real estate for construction—housing	38	13%	23	9%
Real estate for construction—income-producing	15	5%	13	5%
Income-producing real estate	94	32%	82	32%
Infrastructure	12	4%	9	3%
Credit not earmarked for funding of specific property	35	12%	38	15%
Total borrower activity in Israel (total exposure, including. off-balance-sheet)	**295 (485)**	**100%**	**259 (435)**	**100%**

Source: Banks' reports to the Banking Supervision Department.

Land

Total balance-sheet credit for land among the five large banking groups was NIS 101 billion as of the end of 2023, up 7 percent from December 31, 2022. The share of balance-sheet credit for land in funding that exceeds 75 percent, reflecting heightened risk, was NIS 58 billion at the end of 2023, 57 percent of balance-sheet credit for land extended by the five large banking groups. Furthermore, additional impediments in transitioning from the stage of land funding to construction loans, occasioned by the effects of the war and the industry's labor shortage, are expected.

The slowdown in performance of credit for land in 2023 traces, inter alia, to measures taken by the Banking Supervision Department in recent years, particularly the requirement of an

additional capital allocation on account of high-leverage land funding,[9] as well as a decrease in the success rates on land auctions, particularly in 2023, and a decline in winning prices in auctions successfully closed.

These and other developments gave indication of a decrease in land value in some parts of the country, particularly land acquired in past years at high prices. For this reason, **the banks were required to comply with the aforementioned guidelines concerning an additional capital allocation on account of high-leverage funding of land for performance in the course of 2023 and adjustments in funding given.**[10] It should be noted, however, that in view of the sizable profits that the developers have amassed in the past few years, many of them are able to absorb the effects of the changes in the economic environment and the implications of the war.

Residential construction loans

Dwelling sales slowed by 35 percent in 2023 relative to 2022, and, thereof, sales of new dwellings in residential construction projects dropped by 31 percent.[11] Although the trend gathered strength due to the war, the end of the year saw some recovery in dwelling sales. Unsold housing stock in builders' possession grew to some 67,000 units by the end of February 2024.

Development of credit risk for residential construction loans

The year saw a notable 66 percent increase in financial credit for residential construction loans, from NIS 22.7 billion at the end of 2022 to NIS 37.6 billion a year later.[12] This is explained, inter alia, by the slowdown in new-dwelling sales. After the war began, however, there were also major delays in construction project progress, although the pace of housing completions remained relatively high.[13]

Discrepancy between the pace of engineering performance and pace of sales—in the course of 2023, the share of the five large banking groups' total exposure to projects in which performance outpaced sales[14] increased from 27 percent to 36 percent.[15] The share of exposure on account of projects for which the discrepancy between performance pace and sales pace is high (20 percent or more), however, increased more gently—from 10 percent

9 Banking Supervision Department Circular 2709-06, concerning an update of Directive 203: Capital Measurement and Adequacy, the Standard Approach—Credit Risk as of May 22, 2022.

10 Ibid

11 Central Bureau of Statistics, "Real Estate Transactions—Dwellings in 2023," https://www.cbs.gov.il/he/mediarelease/DocLib/2024/047/04_24_047b.pdf

12 Data: reports to the Banking Supervision Department, five large banking groups—Directive 831.

13 For elaboration, see Chapter 5 in the Bank of Israel Annual Report for 2023.

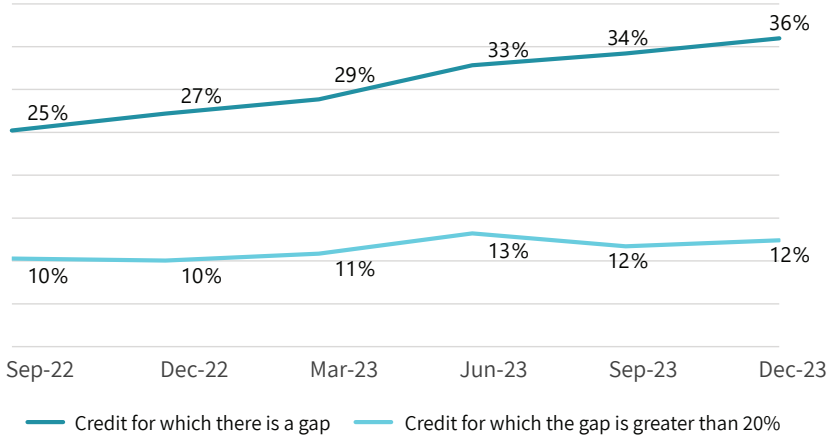
14 The discrepancy between the pace of engineering performance and the pace of sales is used as an index for the level of risk in construction projects.

15 Ibid.

at the end of 2022 to 12.4 percent a year later (Figure 5.68). It is also noteworthy that sales outpaced engineering performance in some two-thirds of projects.

There was an increase in the share of credit that has a gap between the pace of performance and the pace of sales, but not where the gap exceeds 20 percent

Figure 5.68 **Credit to Underwrite Construction Projects in Respect of Which There is a Gap Between Engineering Work and the Pace of Sales, and Credit Where This Gap is Greater than 20%, Activity in Israel, the Five Large Banking Groups, September 2022–December 2023** (percent)



SOURCE: Based on reports to the Banking Supervision Department.

Absorption capacity[16] in residential construction projects—the rate of absorption capacity in residential construction projects decreased slightly in 2023 but remained relatively high at 70 percent at year's end. Notably, however, even though construction sites have been operating at less than full capacity since the beginning of the war, builders are continuing to absorb all fixed expenses, thus increasing construction costs. If these developments continue, they may impair absorption capacity in projects.

To contend with these difficulties and power the market despite the war and, particularly, to meet prior-sales targets—a prerequisite for the issues of construction loans—some developers offered special deals for homebuyers while refraining from lowering actual prices.

[16] Absorption capacity reflects the highest possible rate of decrease in dwelling sale prices without the bank absorbing a loss on the project.

Income-producing real estate

Outstanding balance-sheet credit from the five large banking groups for real-estate activity was NIS 109 billion at the end of 2023, up 11 percent from year-earlier.

As of the end of 2023, outstanding balance-sheet credit from the five large banking groups for real estate in which construction was completed stood at NIS 94 billion, thereof NIS 18.8 billion (20 percent) at LTV rates exceeding 75 percent, indicating heightened risk.[17] Similarly, outstanding balance-sheet credit from the five large banking groups for income-producing real estate under construction ended the year at NIS 15 billion, of which NIS 3.9 billion (26 percent) at LTV rates in excess of 75 percent.

Credit risk for income-producing real estate exists both at the construction stage, in which credit needs are high because receipts from rental of the property accrue only after construction is completed, and after completion of construction, due to the many years of repayment that are conventional in this form of credit. The upturn in the interest rate environment has a major effect on the level of industry risk in view of its steep credit needs.

Income-producing real estate—office and commercial space

Outstanding balance-sheet credit for income-producing commercial and office space, in which construction was completed, was NIS 61 billion at the end of 2023, up 14 percent from year-earlier. Credit as a share of funding that exceeds 75 percent, reflecting heightened risk, was NIS 11 billion at the end of 2023, up 18 percent from total balance-sheet credit for income-producing office and commercial space. Credit risk at the end of 2023 on account of income-producing office space was affected, inter alia, by the high-interest environment and changes in renters' tastes and demand for rented offices, with distinctions made between new buildings and old ones and among different parts of the country.

Income-producing residential real estate (including sheltered housing)

Outstanding credit for income-producing residential properties (including sheltered housing), in which construction was completed, came to NIS 15.4 billion at the end of 2023, up 5 percent from year-earlier. Credit for this purpose in the share of funding that increased [exceeded 75 percent and that reflects heightened risk was NIS 3.5 billion at the end of 2023, 23 percent of outstanding balance-sheet credit for income-producing properties for residential use (including sheltered housing). Given the increase in the interest rate environment, it became less worthwhile activity in this field and there are companies active in the field that are putting up for sale dwellings initially earmarked for rental or that were used for rental over a period of several years.

[17] Data from reports to the Banking Supervision Department, five large banking groups—Directive 831.

Credit not secured by real estate

Credit to construction and real-estate companies that is not secured by a specific property in Israel is given for several purposes, mainly to finance performance contractors' activity and for short-term credit to borrowers in the industry, including borrowers in which sizable activity is concentrated. Since this credit is not secured by an encumbrance on property, it carries a considerable structural risk. Outstanding balance-sheet credit to borrowers in the construction and real-estate industry not secured by real estate was NIS 35 billion at the end of 2023, down 8 percent from year-earlier.

Performance contractors

Financing for performance contractors was a high-risk activity even before the war began, for reasons including the industry slowdown and the increase in the interest environment. Since the war erupted, performance contractors have been exposed to additional risks, particularly labor shortages and rising costs of labor and raw materials. Notably, as a rule, most credit to performance contractors is used for guarantees (off-balance sheet credit), particularly performance guarantees linked to specific projects.

Box 5.2 | Lessons of Bank Failures in the US in March–May 2023[1]

- In March–May 2023, three US banks failed after experiencing withdrawals on an unprecedented scale within a short time.
- The failure of these banks was the most significant stress that the global system experienced since the Global Financial Crisis in 2008, putting the banking regulation that was anchored in that crisis to the test.
- These events prove once again the importance of conservative and effective macroprudential supervision of entities that accept deposits and use them to extend credit.
- The Banking Supervision Department studied the events and the regulatory responses to them around the world in detail, and examined which lessons might be relevant for the Israeli system. The Department intends to apply the lessons that were learned.

The sequence of events

Until the beginning of 2022, the three US banks in question—Silicon Valley Bank (SVB), Signature Bank of New York (SBNY), and First Republic Bank (FRB)—enjoyed a good reputation, financial success, and rapid and exceptional growth in deposits and equity prices. Their success was abetted, inter alia, by flourishing high-tech and crypto markets in the aftermath of the COVID-19 pandemic. The trend began to turn around in the second quarter of 2022 with the onset of steep interest rate increases in the US, a significant downturn in the technology sector, and steep declines in the crypto market. Customers in both of these sectors began to withdraw their deposits, and the banks responded by raising their deposit interest rates in an attempt to retain their customers, causing their profitability to erode.

SVB was the first to be hit. The rating agencies threatened to downgrade its rating due to concerns of impairment to its profitability. In response, on March 8, 2023, the bank's board of directors released a plan to bolster liquidity and capital. This move was meant to calm the market, but in practice it was perceived as evidence that the bank was in distress. This immediately toppled the markets' confidence in the condition of the bank, drove the bank's equity prices down, and triggered an unprecedented run on deposits. On March 10, 2023, SVB failed and the regulator closed it.

The failure of SVB made the entire financial system much more sensitive and had a particularly dire impact on SBNY and FRB, which the market also singled out as vulnerable. Both banks experienced massive withdrawals of deposits, and on March 12, 2023, the regulator had to close SBNY's doors.

[1] The Box includes some refrence to the Credit Swiss failure, which happened at the same time period.

At this stage, the regulators announced that they would also cover uninsured deposits at both failed banks. They also unveiled a far-reaching program of liquidity injection to the banking system and arranged $30 billion in deposits by several large banks with FRB, thereby signaling trust in its condition. Withdrawals from FRB did slow for some time, until the financial statements for the first quarter of 2023, released in late April, revealed the massive extent of deposit withdrawals in that quarter—again undermining confidence in the bank and unleashing a new wave of massive withdrawals.

On May 1, 2023, FRB was acquired by JPMorgan Chase with the regulator's intervention and the US President affirmed that this bank's depositors would also remain safe.

Until the eve of the failure, all three banks had enjoyed a good reputation, adequate capital adequacy, reasonable margins, and low exposure to credit risk. Those banks were defined as medium-sized banks and, as such, were not subject to full regulatory requirements, though in retrospective, even full application of these requirements was unlikely to have sufficed to change the developments. Even though each bank had idiosyncratic characteristics, one may generalize and state that their main sensitivity is due to basing profitability mainly on interest rate spreads rooted in contract duration differentials[2] and in confidence in the stability of their customer relations. This confidence was especially relevant because at least two of the three failed banks used a niche business model, specializing in delivery of high-quality services to a specific customer segment (business and private customers in the fields of high tech and crypto).

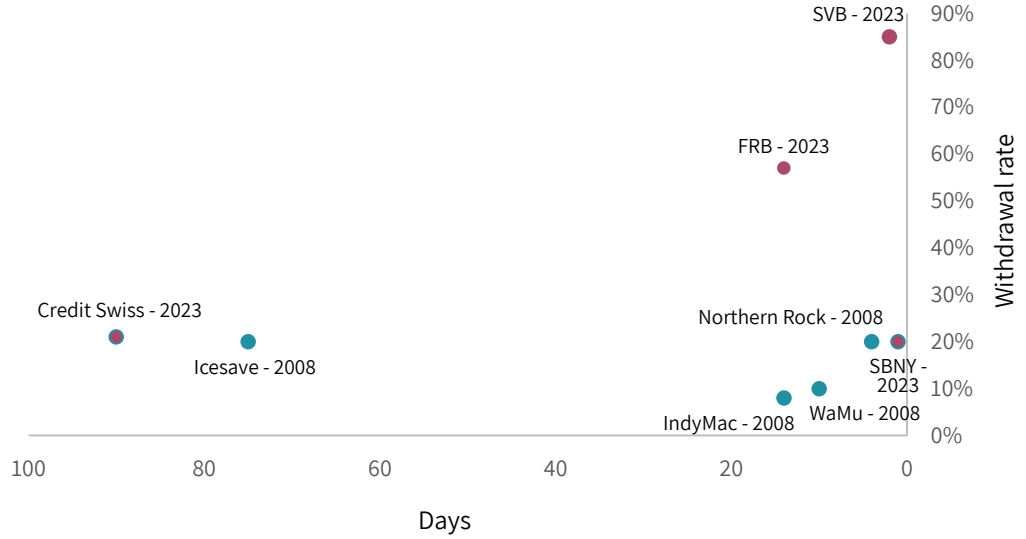
The speed and intensity of the run on deposits in these three cases were unprecedented relative to previous financial crises, including the Great Financial Crisis (GFC) in 2008. This is demonstrated in the withdrawal of $40 billion in deposits in one day at SVB and $100 billion in two weeks at FRB (Figure 5.69)

It is important to understand that even though the three banks held liquidity cushions of sizes that were considered reasonable to good in regulatory terms, they were unable to withstand withdrawals of such magnitude.

[2] Contract duration differentials reflect a bank's exposure to the risk of a loss as a result of change in interest rates when measured by contractual dates of maturity of assets as against those of liabilities, with no reflection of the effect of assumptions on customer behavior.

The run on the bank—increased speed and volume of withdrawals in 2023 compared with the past

Figure 5.69 Speed and Intensity of Deposit Withdrawals Compared with Previous Financial Crises



SOURCE: Basel Committee, "Report on the 2023 Banking Turmoil", October 2023.

Interest risk

In general the banks based their business model on providing their customers with quality service and, as a corollary, accepting relatively large deposits with short maturities and at low interest rates. The banks used these deposits to issue loans or invest in long-term bonds at fixed rates, in a manner that provided them with interest rate spreads due to the differnces between short-term yield and the long-term yield. As a result, the contractual maturity dates created acute exposure but the banks assumed that their good customer relations would allow deposits to remain stable and at low interest, making their effective level of exposure to the interest rate reasonable. At first glance, the historical data conventionally used in risk-management models seemed to support this assumption to some extent.

In actuality, the steep upturn in interest rates in 2022 led to the onset of pressure from customers to raise deposit interest rates. Thus, the banks' spreads began to narrow parallel to decline in the fair value of assets and of the economic capital.[3] Eventually this assumption, which underpinned the banks' business model and risk management, totally collapsed, eliciting feverish efforts by the banks' boards of directors to reduce the expected damage to profitability in order to avert a severe reputational demage and decline in market indicators,

[3] Economic capital denotes the difference between assets and liabilities in terms of economic value, which is customarily measured on the basis of fair value.

even if this entailed a further increase in their exposure to interest rate risk and a "gamble" on the reversal of the interest rate trend. The boards of directors apparently assumed that their liquidity cushions would allow them to ride out the hard times. In retrospect, they failed on account of this assumption, too.

Table 5.2 presents selected indicators of interest rate risk several months before the failure, including a comparison with data from the Israeli system. It shows the high level of interest rate risk among the banks that failed. Furthermore, the banks' sensitivity to economic capital, calculated after the effect of behavioral assumptions, yields a picture of risk exposure that is much milder than that generated by the risk indicators in the absence of these assumptions.

Table 5.2 | Selected indicators of interest risk as of December 31, 2022

	United States			Israel
	FRB	SBNY	SVB	Banks in Israel (range)
Net assets[1] > 3 years to total assets	70%	41%	55%	5% - 10%
Net fair value[2] to equity	-241%	-54%	-94%	(-17%) - 6%
Economic-capital sensitivity in a 1% rate increase scenario	N.A.	3.3%	-15.0%	(-2.3%) - 0.8%

Source: Banks' financial statements as of December 31, 2022.
(1) Net assets—assets less liabilities.
(2) Net fair value—assets in fair-value terms less liabilities in fair-value terms.

Liquidity risk

In the years leading up to the failure, the three banks had seen a vigorous increase in deposits. In accordance with their business model, a very high share of these deposits was relatively large, hence not covered by deposit insurance and had short contractual maturity. As stated, the banks based their liquidity risk management largely on the assumption that their customer relations would allow deposits to remain stable and that they could quickly liquidate long-term and nontradable assets by encumbering them in order to obtain immediately available lines of credit from the central bank and the FHLB.[4]

The series of interest rate increases that began in March 2022, coupled with a slowdown in technology industries and a crisis in crypto, unleashed an initial wave of deposit withdrawals

[4] FHLB—Federal Home Loan Bank, a government sponsored enterprise established by law that engages in issuing credit to financial institutions in the US. See https://fhlbanks.com

by late 2022. The three banks withstood this major stress by drawing down their liquidity cushions and utilizing some of the credit lines that the central bank and the FHLB had made available.

At the beginning of 2023, as noted above, deposit withdrawals from these banks escalated to an unprecedented scope, which evolved into a run on the bank. The intensity and rapidity of the withdrawals were strongly affected by rapid transmission of messages on social media and use of technological means. SVB and SBNY failed almost immediately whereas FRB, which had exceptionally large credit lines from the central bank and the FHLB—more than $60 billion—held on for more than a month. Given their size and catagory under US banking regulation, the three banks were not required to maintain an LCR ratio.[5] However, it must be noticed that even this ratio could not have enabled the banks to withstand deposit withdrawals of such magnitudes. Furthermore, analysis performed after the fact showed that even if the banks had had to comply with the ratio, they would have been in compliance until the very onset of the failure.

Table 2 presents selected indicators of liquidity risk, including a comparison with data from the Israeli system. Conspicuous differences are found in the share of demand deposits and the practice among US banks to secure immediately available credit lines also against nontradable loans and assets that they encumber to the central bank and the FHLB, thus providing themselves with a sizable additional tier of sources of immediate liquidity in the event of an emergency.

Table 5.3 | Selected indicators of liquidity risk as of December 31, 2022

	United States			Israel
	FRB	SBNY	SVB	Banks in Israel (range)
Deposits > NIS 1 million / total deposits (in US banks- >USD 250,000)(1)	68%	90%	94%	64%-79%
Demand deposits / total assets	61%	74%	79%	31%-50%
Liquid assets / total assets(2)	43%	42%	67%	25%-36%

Source: banks' financial statements as of December 31, 2022.

(1) U.S.—deposits up to $250,000 are covered by Federal deposit insurance.

(2) Liquid assets include cash, bank deposits, and investments in bonds. In the U.S., they also include immediately available lines of credit from the central bank and the FHLB, secured by loan portfolios.

[5] Liquidity Coverage Ratio, an indicator for short-term liquidity.

Switzerland[6]

On March 19, 2023, as these events were unfolding in the United States, UBS Bank announced that it had acquired Credit Suisse (CS). The acquisition came in the aftermath of a series of events involving CS over several years that led to penalties, losses, and a demage to the bank's reputation. The bank's problems mounted in March 2023, when it announced a delay in issuing its 2022 financial statements. This, alongside the banks failures in the US and negative market sentiment, triggered a wave of withdrawals of funds and concerns regarding the bank's stability. In response, the Swiss authorities acted swiftly and arranged the acquisition of the bank by UBS, while providing some state guarantees in so doing. This demarche, among its other effects, involved a large haircut for holders of "Additional Tier 1 capital" bonds—a measure that was widely criticized.

Regulatory responses around the world

The failures of the US banks and of Credit Suisse were the most significant stresses that the banking system had suffered since the GFC in 2008. They were examined shortly after the failures and continue to be studied by international and local supervisory authorities in order to determine whether the existing regulatory and supervisory frameworks and the arrangements to deal with banks' failure are adequate and respond appropriately even in a world of changes in the banking universe.

In the course of 2023, a lengthy series of US and Swiss authorities, international authorities, and leading research and academic institutes published reports and insights about the events, their significance, and their implications.[7] Among the many topics raised in these documents, the following points are noteworthy:

- Considering the possibility of narrowing the difference in regulatory requirements between large banks of systemic importance and banks not defined as such.
- Reemphasizing the importance of effective risk management, adequate corporate governance, and stringent supervisory approach for correction of weaknesses identified at the banks.
- Reviewing various aspects of existing directives concerning liquidity risk management, including examining LCR withdrawal coefficients from the standpoint of the rapidity of withdrawal of deposits at the current technology era, the effect of concentration

[6] Sources of information: FINMA Report, Lessons *Learned from the CS Crisis*, December 19, 2023; Basel Committee, *Report on the 2023 Banking Turmoil*, October 5, 2023.

[7] Noteworthy among these authorities are the Fed and the FDIC in the United States and the BIS and the FSB on the international scene. Below are links to several leading reports in this context:

- https://www.federalreserve.gov/publications/review-of-the-federal-reserves-supervision-and-regulation-of-silicon-valley-bank.htm.
- https://www.bis.org/bcbs/publ/d555.htm
- https://www.fsb.org/wp-content/uploads/P101023.pdf

of deposits, fine-tuning the requirements that relate to emergency liquidity programs, and the need to be prepared to use immediately available credit lines from the central bank.

- Examining whether the existing treatment of interest rate risk under the current Basel standards for capital allocation is appropriate and adequate.
- Examining the utility of using "Additional Tier 1 instruments" in view of the events at CS.

In coming years, some of the insights are expected to find expression in regulatory updates in the US and among the international agencies. Obviously, once these are formulated, the Banking Supervision Department will examine the need to adopt them.

Learning lessons by the Banking Supervision Department

The Banking Supervision Department subjected the events and the global regulatory responses to detailed study and considered which of the lessons may be relevant for the Israeli banking system. The Department intends to apply these lessons and to continue tracking concurrent processes abroad.

We should emphasize that even in ordinary times the Banking Supervision Department closely follows developments in the various risks faced by banks and tracks their risk management and corporate governance, including those relating to interest-rate and liquidity risks. As internantional bodies note regularly in their examination reports, the conduct of the Banking Supervision Department in these fields, as in the other prudential aspects, is typified by conservatism and stringency.

The measures that the Banking Supervision Department is planning to take include the following:

- Improving the supervisory monitoring tools of the development of liquidity and interest rate risks.
- Stepping up supervisory involvement in the banks' risk management models and considering ways to limit overreliance on behavioral assumptions.
- Reviewing the banking system's emergency plans for extreme liquidity situations, with emphasis on coping with massive withdrawals within a very short time.
- Reexamining the arrangements that pertain to a bank in failure and their supportive statutory infrastructure.