

**BANK OF ISRAEL**

Office of the Spokesperson and Economic Information

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Press release:

**Analysis from the forthcoming Bank of Israel Annual Report: Heterogeneity in changes in households’ debt burden due to the increase in the Bank of Israel interest rate**

* **Since the Bank of Israel began raising the interest rate, in April 2022, borrowers living in localities with a high socioeconomic index ranking repaid parts of their mortgage (particularly the portion on the Prime track) more often than mortgage borrowers living in localities with a low socioeconomic index ranking.**
* **In the same period, consumer loan borrowers living in localities with a high socioeconomic index ranking had a greater tendency to avoid taking on new debt and to repay existing debts, while those living in localities with a low socioeconomic index ranking took on additional debt.**

**1. Background**

A box in the forthcoming Bank of Israel Annual Report analyzes households’ debt burden and the impact of the monetary tightening on this burden, and examines the differences in how borrowers dealt with the tightening, based on their demographic and debt characteristics. The box focuses on mortgages and consumer loans and compares the characteristics of households’ debt before the beginning of the monetary tightening (April 2022) and its characteristics in September 2023.[[1]](#footnote-1)

The increase in the interest rate had a direct impact on many households carrying variable-rate debt, particularly in the Prime track. However, some of the borrowers succeeded in moderating the impact of interest rate increase on their monthly payment in various ways:

1. Reducing existing debt by early repayment (in whole or in part)
2. Changing the terms of their credit, so that their monthly payment would be smaller—for instance by extending the debt’s term to repayment, without changing the principal amount.[[2]](#footnote-2)

To be clear, these measures reduced the impact of the interest rate increases on the monthly repayment in the short term, but we cannot know whether they reduced the overall debt burden throughout the term of the loan. This partly depends on the development of inflation and the Bank of Israel interest rate over the coming years.

The economic literature finds that a household’s tendency to take each of these steps in order to reduce the debt burden (or to avoid increasing it) when the interest rate increases is correlated with its socioeconomic situation, its financial state, its financial literacy, and its bargaining power vis-à-vis the lender.

Beraja et al. (2019), Di Maggio et al. (2017), and Kyes et al. (2014) found that a decline in the nominal interest rate led households to refinance their mortgages at a fixed rate, and that the impact differed between regions in the US. Kramer et al. (2024) found that households with low incomes did not refinance their mortgages during low interest rate periods, contrary to the trend among more established populations.

**2. Different types of debt**

In April 2022, about 62 percent of the people listed in the Credit Data Registry[[3]](#footnote-3) had debt (mortgage, consumer loan, utilization of lines of credit, and overdrafts in current accounts).[[4]](#footnote-4) Until September 2023, in parallel with the increase in the interest rate, the rate of consumer debt borrowers declined by about 3 percentage points, and the rate of mortgage borrowers declined by about 1 percentage point.[[5]](#footnote-5)

An examination of the socioeconomic rating of individuals’ place of residence[[6]](#footnote-6) found that the tendency to take on consumer debt or to utilize overdrafts declines as the socioeconomic rating of the borrower’s place of residence increases. These differences are notable both in April 2022 and at the time of the changes that took place in September 2023. In contrast, the rates of borrowers with a mortgage and people who have no debt (overdraft, consumer loan, or mortgage) increase with the socioeconomic rating of the borrower’s place of residence (Figure 1).[[7]](#footnote-7) It is notable that the decline in the rate of those with consumer debts during the period in which the interest rate increased is greater among households with a high socioeconomic rating (Figure 2). No such trend is observed during the periods that preceded the monetary tightening.

FIGURE 1[[8]](#footnote-8)

**3. Mortgages[[9]](#footnote-9)**

This segment examines the change in the debt burdens of households with mortgages according to the measures they took to change their debt level and characteristics. The analysis includes about 1.2 million mortgage borrowers who did not take on new debt tracks after April 2022, and who still had mortgages in September 2023.[[10]](#footnote-10) We track these borrowers and compare their repayments and debt volumes between the two periods. Figure 2 shows that from the beginning of the monetary tightening, the average monthly payments in respect of those mortgages increased markedly, and that the rate of increase is greater as the socioeconomic rating of the borrower’s place of residence is lower. The blue columns show actual monthly payments, which were impacted by the increase in the interest rates but also by measures that households took to lower the payments (such as early repayment or extending the term to payment). The yellow columns show the average rate of change of the payment that would have been required had the borrowers not made changes to the terms of their loans and the only change would have been the increase in the prime interest rate. Without additional changes to the loan amount and its characteristics, the rate of increase of the monthly payment for borrowers living in localities with a high socioeconomic rating was higher. The main reason for this is their higher exposure to the prime component in April 2022[[11]](#footnote-11), but it is clear that they actively dealt with this risk and lowered their exposure when it was realized—when the prime rate increased.

FIGURE 2

We now focus on about 902,000 borrowers who, according to the terms of their mortgages in April 2022, would not pay off their mortgages (or part thereof) at least until September 2023. About 8 percent of these borrowers reduced the total volume of their mortgage between April 2022 and September 2023, and their share of all borrowers increases as the socioeconomic rating of their place of residence increases, from 5 percent to 12 percent. This means that more borrowers living in localities with high socioeconomic ratings advanced the repayment of part of their mortgages. Most of the debt that was paid off was in the prime track.

Based on these findings, using a statistical model, we checked whether the likelihood that a borrower would pay of his mortgage early, particularly the prime component, was greater among borrowers living in localities with higher socioeconomic ratings or among borrowers who are more well-established (using indications such as mortgage size and total credit card payments[[12]](#footnote-12)), given the individuals’ observed characteristics such as age and place of residents, as well as characteristics of the debt. To do so, we estimated a probit equation that links the likelihood of lowering the total mortgage volume during the period, particularly the part on the prime track. We conducted two estimations. In the first, the dependent variable obtains the value of 1 if a borrower’s total loans in the prime track declined between April 2022 and September 2023. In the second, the dependent variable obtains the value of 1 only if there was a decline in both the borrower’s total loans (not just the prime component) and his total loans in the prime track. The second estimation enables us to focus on borrowers that made an effective repayment (their total debt declined), as opposed to borrowers who paid off their prime component but increased other debt in its place.

The data used for the estimations are at the borrower level (for all mortgages he has borrowed), and for each borrower, the principal amounts on all prime tracks (for the first estimation) and on all tracks (for the second estimation) were totaled. The average period to repayment of the loan[[13]](#footnote-13) was calculated, and we controlled for the current balance at the base period. Another explanatory variable that is used as an index of the borrower’s financial strength—credit card expenditures—is calculated as the sum of the borrower’s credit card expenditures during the base period.

Table 1 shows that more established households are more likely to reduce their exposure to the prime component. This is reflected in coefficients of the socioeconomic rating variable and the coefficient of the variable relating to total credit card expenditures (excluding interest). We also found that the higher the debt balance was prior to the monetary tightening, and the greater the expected impact of the monetary tightening, the greater the chance that the borrower will reduce his exposure to an interest rate increase. In addition, the longer the period remaining to repayment is, the less likely the borrower will repay the debt.

TABLE 1[[14]](#footnote-14)

We now examine the effect of the repayment on the level of the monthly payment. Figure 3a shows that the rate of those paying off their mortgages early began to increase only about 10 months after the start of the interest rate increases, and even then, the change in the average rate of repayments was not great. Figure 3b shows that the effect of the early repayments that were made after the start of monetary tightening on the monthly repayments was stronger than the effect of the repayments made before then, and that those made between October 2022 and July 2023 led to an average decline in the monthly repayment of about NIS 1,400. The greater the tie span between the repayment and the end of the interest rate increases, the greater the underestimation of its impact on the monthly repayment. The figure also shows that borrowers (households) who made early repayments during the monetary tightening period made higher monthly payments than those who made the early repayments before the monetary tightening. In both periods, those who made early repayments on their mortgages had higher monthly payments than the average of all mortgage borrowers, meaning they had relatively high financial strength.

FIGURES 3a and 3b

**4. Consumer credit**

In contrast to mortgages, consumer debt is short and dynamic (borrowed for an average of about 5.5 years rather than 23 years for mortgages in April 2023). Therefore, a great deal of how consumer borrowers deal with increased monthly payments in respect of the increase in interest rates is reflected in the decision not to take out new debt (for instance, to avoid taking out car loans). These borrowers, like mortgage borrowers, can repay their existing debt (in whole or in part) early.

In April 2022, there were about 2.2 million people with consumer debt, compared with about 2.1 million in September 2023. About 18 percent of those with such debt in April 2022 repaid their debt in full during the reviewed period (“closers”), and about 16 percent of those with debt in 2023 were borrowers who did not have such debt in April 2022 (“new debtors”). Figure 4a shows that the rate of closers increases with the socioeconomic rating of the borrower’s place of residence, and the rate of new debtors declines with the increase in that rating. An analysis of the group of borrowers who had consumer debt in both April 2022 and September 2023 (“continuers”) shows that the rate of borrowers who increased their debt during the period declines with the increase in socioeconomic rating of the borrower’s place of residence. Figure 4b shows the monthly repayments of the continuers. The figure relates to actual repayments of those borrowers, after the effects of both the increase in the interest rates (which worked to increase monthly payments of existing and new borrowers) and the measures taken by households—taking on additional debt or repaying existing debt. The figure shows that the rate of increase in actual monthly payments declines with the increase in the socioeconomic rating of the borrower’s place of residents, partly because borrowers living in localities with a low socioeconomic rating did not markedly change their behavior. They increased their debt on average, similar to the increase during previous periods, which led to an increase in their monthly payments. In contrast, borrowers living in localities with high socioeconomic ratings did not increase their debt, or even lowered it (in contrast with previous periods). Residents of localities with low socioeconomic ratings extended the average term to repayment of their debt, which slightly moderated the effect of increasing the debt on payments.[[15]](#footnote-15)

FIGURES 4a and 4b

In conclusion, we can see significant variance between established households, which acted to reduce their monthly payments by repaying loans and avoiding taking out new credit, and households with fewer means, some of which increased their debt burden and pay their monthly payments in respect of it even beyond the increase that would have been derived solely from the increase in the interest rate.

1. The analysis is as of September 2023, since the box focuses on the effect of monetary tightening, and avoids the potential effects of the war that broke out in October 2023. [↑](#footnote-ref-1)
2. Another way is to replace debt with a variable (prime-linked) interest rate with debt carrying a fixed rate or a variable rate at lower frequency (the level of which during the reviewed period was lower). Borrowers can also lower their monthly payments by taking out a “bullet” or “balloon” loan (where the principal balance is repaid in full at the end of the period, while the interest is paid over the life of the loan or at the date of repayment, respectively). [↑](#footnote-ref-2)
3. The analysis is based on about 5.67 million individuals regarding whom there were reports in the Register in April 2022, and about 5.96 million individuals regarding whom there were reports in the Register in September 2023. The Register includes all those who have a deferred payment card and/or a current account credit facility and/or a negative balance in their current account (even if they don’t have a credit facility). A person may choose to be removed from the Register, and in such a case, there would be no data about him. However, the vast majority of people do not make such a request, such that the coverage rate is very high. [↑](#footnote-ref-3)
4. Since most borrowers are exposed to the prime track, the analysis focuses on the changes that took place in accordance with the rate of exposure to prime. [↑](#footnote-ref-4)
5. Those changes do not characterize the parallel period that was examined, such that between April 2021 and April 2022, the rate of those without debt remained unchanged, 38 percent, the rate of those with mortgages in those two months were 26.4 percent and 26.5 percent, respectively, the rates of those with consumer debt were 38.6 percent and 38.1 percent, respectively, and the rates of those with overdrafts were about 39.4 percent and about 40 percent, respectively. [↑](#footnote-ref-5)
6. The socioeconomic rating of the locality in which the borrower lives obtains values from 1 (low) to 10 (high) according to a rating by the Central Bureau of Statistics. Small localities for which information was deleted from the database due to the Central Credit Register’s confidentiality requirements were omitted from the analysis. Due to high variance within the localities with low socioeconomic ratings, particularly in Jerusalem, the figures presented in the box according to socioeconomic crating omit Jerusalem. [↑](#footnote-ref-6)
7. For more discussion on the types of debt that borrowers take out according to the socioeconomic rating of their place of residence, see Appendix A. [↑](#footnote-ref-7)
8. Between April 2021 and April 2022, there was a decline in most deciles of about one percentage point, and a greater decline for those living in localities with medium socioeconomic ratings (5–7). [↑](#footnote-ref-8)
9. The analysis relates to mortgages issued by the banking system, which include nonresidential loans secured by a residential property, minus observations that exceed the 99.5 percentile in the distribution of debt levels (principal, current balance, and monthly payment). [↑](#footnote-ref-9)
10. This population group was chosen in order to neutralize the impact of mortgages that were taken out gradually over the period, with the principal amount of the loans increasing over time. Since most of the population has just one mortgage, the absence of discussion of households that increased their debt by taking out a second mortgage does not significantly affect the results. [↑](#footnote-ref-10)
11. The rate of exposure to the prime rate in April 2022 increased with the socioeconomic rating of the borrower’s place of residence, from about 24 percent for ratings 3–4 to about 37 percent for ratings 8–10. The rate of exposure to the prime rate of those residing in localities with a socioeconomic rating of 1–2 was also high—about 30 percent. [↑](#footnote-ref-11)
12. Non-interest-bearing expenses. [↑](#footnote-ref-12)
13. Weighted average according to current balance in each track. Calculated for all tracks, and separately for the prime track. [↑](#footnote-ref-13)
14. Additional control variables: age, aged squared, term to repayment on the prime track, dummy variable for non-Jew, and dummy variable *Haredi* Jew. [↑](#footnote-ref-14)
15. The picture where more established borrowers did not lower their debt and less established borrowers increased it is not obtained when comparing April 2021 with April 2022. [↑](#footnote-ref-15)