

# Data on Securities Holdings

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## **Abstract**

This working paper describes the data on securities holdings by Israeli residents and nonresidents, which are used by the Bank of Israel for policy analysis and decision making.

The database contains monthly data on the holdings of Israeli residents and nonresidents in securities held through local banks and investment houses. These data facilitate the analysis of financial activity by sector and instrument and a variety of other segmentations. These will be highlighted in the paper.

The paper also discusses the contribution of these data to the Bank of Israel's analysis and examination of developments and risks that are relevant to financial stability, and their contribution to the generation of financial statistics for Israel.

## 1. Background

One of the main lessons learned from the Global Financial Crisis of 2008 is the importance of making decisions in the monitoring and support of financial stability based on detailed information about the financial system, rather than relying solely on aggregate information. As a result, central banks, including the Bank of Israel, have established detailed financial databases, which include securities holdings.

As is well known, until the eve of the financial crisis, policymakers and financial supervisory authorities, including central banks, relied on aggregate information that did not provide a sufficiently clear picture of financial developments and risks, which had become increasingly complex and sophisticated, sometimes on a global level. Therefore, with the information they had, policymakers and supervisory authorities struggled to identify who the players were, what investment instruments they held, what risks they were exposed to, which sectors were exposed to a particular issuer, and many other important questions. As a result, supervisory authorities found it difficult to identify early warning signs that heralded the crisis.

The Bank of Israel, like many other central banks (including those of Japan and the countries of the European Monetary Union<sup>1</sup>), attributes importance to the analysis of information on securities holdings as part of the information infrastructure needed to support the economy's financial stability and policy making.

These data allow for the analysis of exposures to different instruments and issuers among the various sectors in the economy, such as the household sector and the business sector, as well as the generation of the economy's financial accounts. Moreover, based on these data, a wide range of new financial indices can be developed, such as the exposure map, allowing for a better understanding of events and risks in the financial domain.

Therefore, these data can make an important contribution to policymaking during a crisis, especially in times of a significant increase in financial risk.

## 2. A description of the database

The database of securities holdings includes data on nonresidents' holdings of securities traded in Israel and the Israeli residents' holdings of securities traded in Israel and abroad.<sup>2</sup> These are data with a monthly frequency, and the sources of the data include financial intermediaries, banks, and local investment houses

The data serve as a source of information on the economy's financial activities in foreign markets and the investors' activities in securities traded on the Tel Aviv Stock Exchange.

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<sup>1</sup> In 2012, the ECB issued Regulation ECB/2012/24, which applies to certain European groups and which established the Securities Holding Statistics (SHS) database.

<sup>2</sup> Apart from Israeli residents' holdings of securities that are held in custody by financial intermediaries abroad.

## 2.1 Main dimensions in analyzing the data

The database collates the information according to four main dimensions that help the Bank of Israel to characterize and analyze financial activity:

- Information about the security (e.g., type of security, maturity date).
- Information about the holder of the security (e.g., sector, residency).
- Information about the issuer of the security (e.g., sector, residency).
- Information about the value of the holding in the security (quantity, value).

The information received makes it possible to focus on the main sectors or the various issuers, and also to present the connections on a from-whom-to-whom basis.

Table 1 shows the value of shares on the Tel Aviv Stock Exchange held by Israeli residents and nonresidents at the end of December 2023, according to sector, and shows the relationship between holders and issuers.

The table shows that the total holdings of Israeli residents and nonresidents amount to about NIS 805 billion. Of this, households hold about NIS 83 billion, with NIS 82 billion in shares of Israeli companies.

Table 1: Value of shares traded on the Tel Aviv Stock Exchange according to residency of the holder and the issuer, December 31, 2023, NIS billion

		Residency of holder						
		Israeli residents <sup>1</sup>					Nonresidents	Total
Issuer's residency	Holders issuers	Institutions and Insurance	Banks	Households	Business sector	Mutual Funds		
	Israeli residents		214	1	82	238	71	184
Nonresidents		5	0	1	2	3	4	15
	<b>Total</b>	<b>219</b>	<b>1</b>	<b>83</b>	<b>242</b>	<b>73</b>	<b>188</b>	<b>806</b>

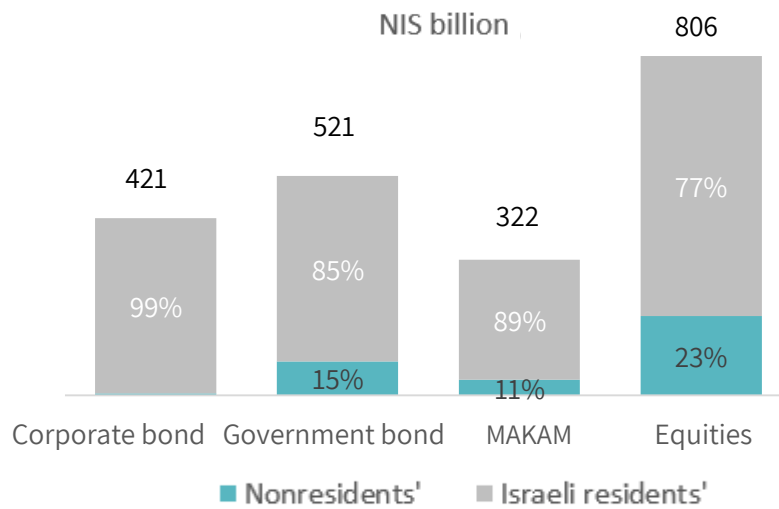
<sup>1</sup> Main sectors

The connections between securities holders and securities issuers, as presented in the table above, have many uses, such as risk analysis in the financial system. The connection between the holder and issuer of debt instruments makes it possible to examine the sources of financing for a particular sector.

This disaggregated information makes it possible to generate statistical data across different dimensions, and creates the ability to investigate the information in depth based on high-quality detailed information. The following is an example of an in-depth analysis of such information:

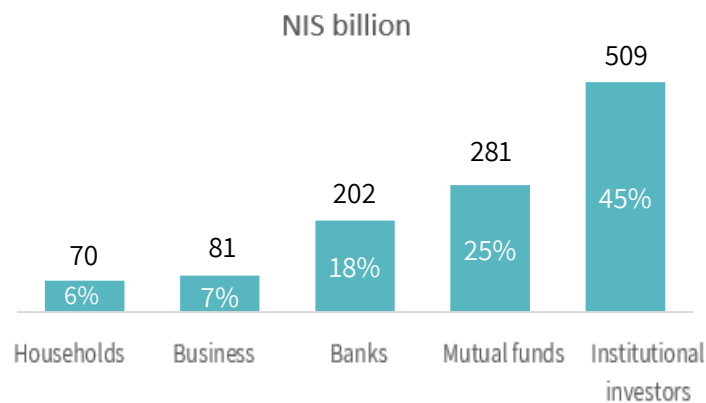
Figure 1 presents the distribution of securities holdings on the Tel Aviv Stock Exchange according to type of security and the residency of the holder. The chart shows that at the end of 2023, nonresidents held about 23% of the value of shares on the Tel Aviv Stock Exchange and about 15% of the value of government bonds

Figure 1: Holdings on the Tel Aviv Stock Exchange by type of security and residency of the holder, December 31, 2023



At the end of December 2023, Israeli residents held a large quantity of bonds. We drill deeper by segmenting the bond holdings by the sector of the holder:

Figure 2: Israeli residents' holdings of government bonds, corporate bonds, and MAKAM traded in Israel by the holder's sector, 31.12.2023

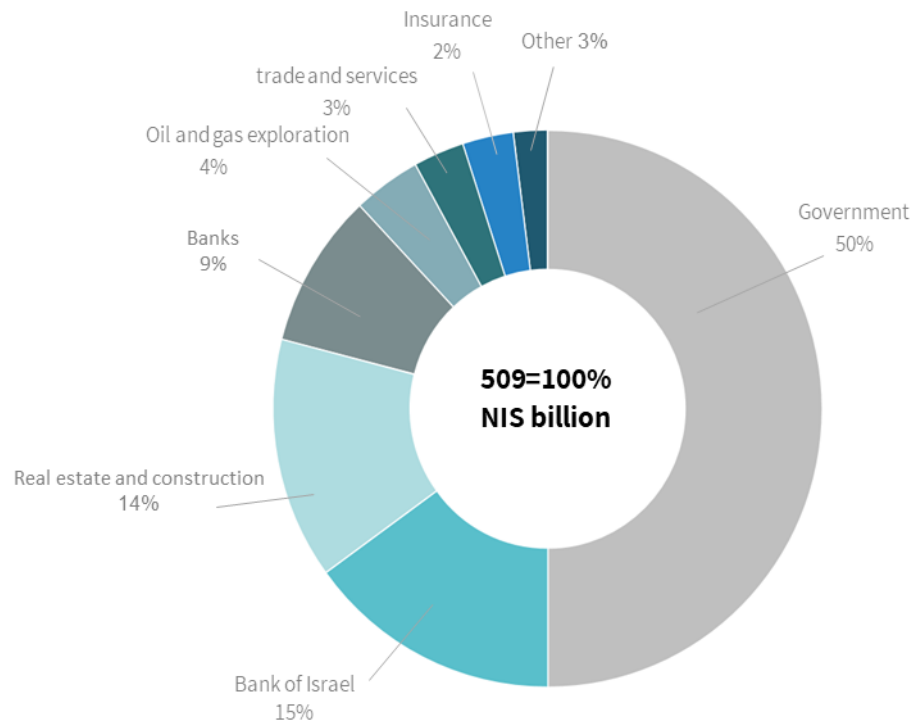


The chart shows that institutional entities<sup>3</sup> hold about half of the bonds and MAKAM in Israel. For this reason, it is important to examine the extent of their exposure to a particular industry and to segment their holdings according to the Tel Aviv Stock Exchange industry classification of the issuer.

<sup>3</sup> Insurance companies, pension funds, provident funds, and advanced study funds.

Figure 3 indicates that half of the bond portfolio in Israel held by institutional entities at the end of December 2023 consisted of bonds issued by the government of Israel. Other major holdings by institutional entities include bonds issued by the real estate and construction industry (10%), bonds issued by the banking industry (9%), and MAKAM issued by the Bank of Israel (15%).

Figure 3: Institutional entities' holdings in government bonds, corporate bonds, and MAKAM on the Tel Aviv Stock Exchange according to the issuer's industry, 31.12.2023.



## 2.2 Estimated positions and flows

In order to generate information that has value, it is necessary to perform both processing and estimation, some of it simple and some of it more complex. One of the interesting data points produced from securities holding data is the variability of positions and flows among securities holders during a given period.

Since the information in the database represents end-of-month positions, estimates are calculated according to an international methodology<sup>4</sup> where:

- Positions refer to the total holdings of the security at a specific point in time

<sup>4</sup> For further details, see the IMF's [Balance of Payments and International Investment Position Manual](#).

- Flows refer to the economic changes that explain variations in the holding positions between two points in time. Flows consist of transactions, price changes, exchange rate changes, and changes due to reclassification or delisting of the security.

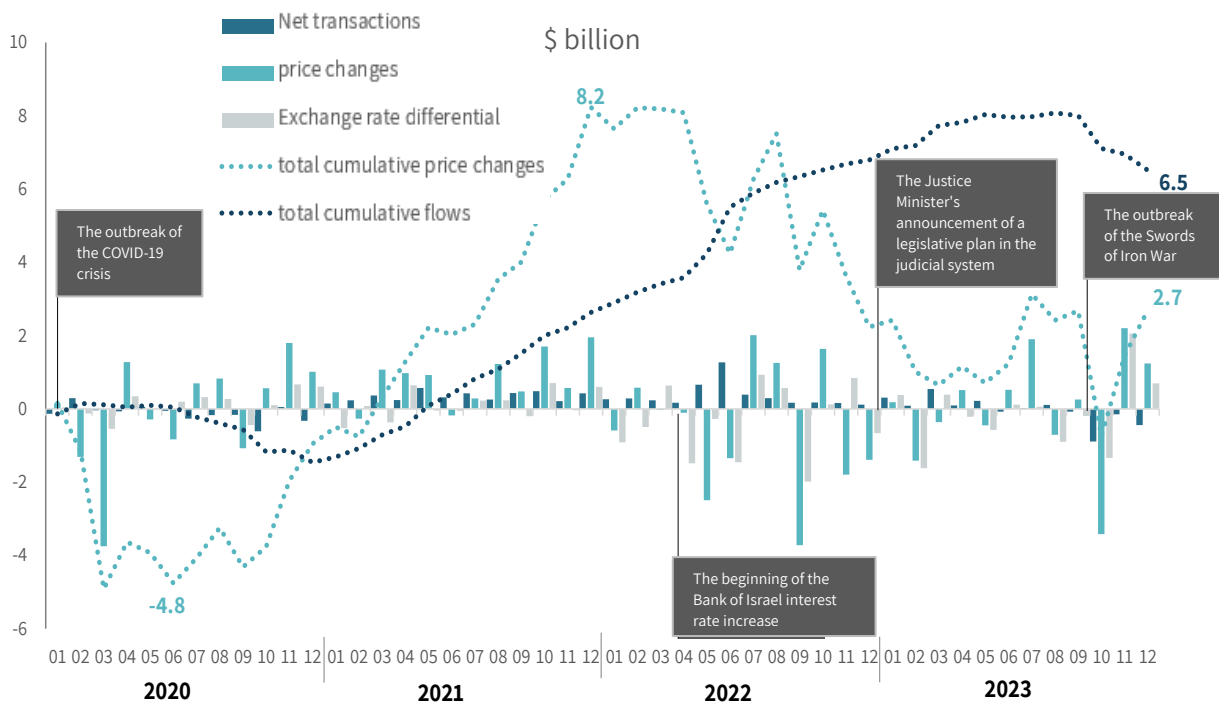
The estimation of flows, price differences, and exchange rate differences are calculated using positions, assuming that changes occurred throughout the period and not just at the end.

Figure 4 shows the factors determining the positions of nonresidents' equities and mutual fund portfolios on the Tel Aviv Stock Exchange from the beginning of the COVID-19 crisis (2020) until the years 2022–3, as characterized by local economic uncertainty. The graph shows that during the period 2020–3, the value of nonresidents' securities portfolios on the Tel Aviv Stock Exchange was heavily influenced by the price changes of shares on the Tel Aviv Stock Exchange. Sharp price declines at the onset of the COVID-19 crisis in early 2020 were offset by subsequent price increases, cumulatively increasing the portfolio value by about \$8.2 billion during the years 2020–2021.

Price declines starting in 2022 due to the impact of the judicial reform, changes in the interest rates both domestically and globally, and subsequently the Swords of Iron war at the end of 2023 reduced the portfolio value by a cumulative amount of approximately \$5.5 billion in 2022–3.

The Figure also shows that despite the uncertainty during this period and the price changes on the Tel Aviv Stock Exchange, nonresidents' net purchases of shares and the total cumulative flows by nonresidents in these years amounted to about \$6.5 billion.

Figure 4: The factors responsible for the change in the total portfolio of shares and mutual funds held by nonresidents<sup>5</sup>



<sup>5</sup> Pension holdings, of up to 5 percent of a single security.

### 3. Connecting to the databases and enrichment of the information

The information on securities holdings is enriched by other databases managed by the Bank of Israel by means of a common identifier, such as the security number. Linking to these databases expands and supplements the reported information, which achieves completeness, removes ambiguity, and allows for consistent classification of instruments and sectors.

Connecting securities holdings data to other databases enables the execution of various segmentations, both on the holder side and the issuer side, such as the value of the financial sector's holdings of government bonds.

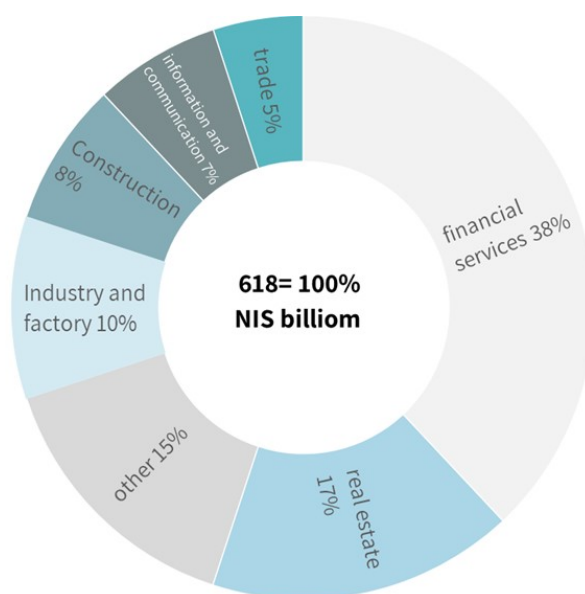
It is possible to classify the sector of Israeli residents who hold securities or the industry issuing them, according to:

- The Tel Aviv Stock Exchange industry classification<sup>6</sup> (see Figure 3).
- The Central Bureau of Statistics (CBS) sectoral/industry classification<sup>7</sup> according to the national accounting rules (SNA – system of national accounting).

Figure 5 presents the distribution of Israeli residents' holdings of shares traded on the Tel Aviv Stock Exchange according to the CBS industry classification.

The Figure shows that at the end of December 2023, the dominant holding by Israeli residents was in shares issued by the financial services industry (38%).

Figure 5: Breakdown of Israeli residents' holdings of shares on the Tel Aviv Stock Exchange by CBS industry classification of issuers<sup>8</sup>, 31.12.2023.



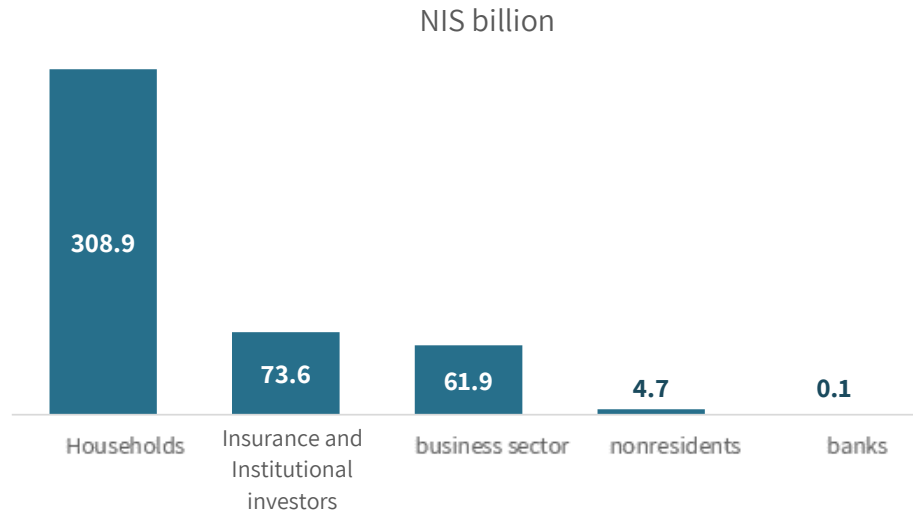
<sup>6</sup> [https://info.tase.co.il/Heb/listings\\_ipo/sector\\_classification/Pages/sector\\_classification.aspx](https://info.tase.co.il/Heb/listings_ipo/sector_classification/Pages/sector_classification.aspx)

<sup>7</sup> Central Bureau of Statistics

<sup>8</sup> Not including shares in an unclassified industry.

Figure 6 shows the holdings of mutual funds by sector. As expected, the main holders of mutual funds in Israel are households, which held a total of NIS 308.9 billion in mutual funds in Israel at the end of 2023.

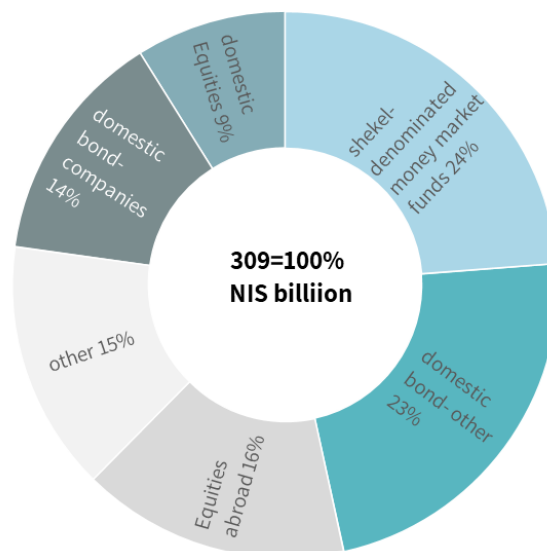
Figure 6: Holdings of mutual funds in Israel by the holder's sector, 31.12.2023.



The connection of securities holdings data to mutual fund data allows for the segmentation of household holdings according to fund characteristics.

Figure 7 presents the breakdown of household holdings of mutual funds by investment group<sup>9</sup>. The Figure shows that at the end of December 2023, households' investments by way of mutual funds were concentrated in domestic bond mutual funds (37%) and money market funds (21%).

Figure 7: Israeli households' holdings of mutual funds on the Tel Aviv Stock Exchange by investment group, 31.12.2023



<sup>9</sup> Investment groups according to the Joint Investment Trust Law.



## 4. Importance of the data

The information derived from securities holdings data is intended to support decision-making processes at the Bank of Israel, such as decisions on monetary policy and the support of financial stability, which are the Bank's two leading objectives according to law, and in the generation of financial statistics for Israel's economy. From this information, aggregate data is generated and published and reported as required to international institutions, such as the IMF.

The various uses of the information include:

### i. Support for the financial stability of the Israeli economy

One of the key lessons from the 2008 Global Financial Crisis is that central banks and supervisory authorities must base their decisions on the analysis of more detailed information, which facilitates a complete and accurate understanding of financial developments and risks in the economy that is necessary for the formulation of macroprudential policy. Within this approach, detailed information on securities holdings is of great value in monitoring financial stability and conducting research in support of policy.

Detailed information contributes to financial stability policy in the modern reality of complex, sophisticated, and interconnected financial markets in several ways: 1. understanding the risks, connections, and dynamics in the financial system; 2. the ability to uniquely analyze transactions and connections between transactions; 3. flexibility in analyzing different scenarios; and 4. the ability to analyze entities in both the financial sector and the nonfinancial business sector.

Thus, the data make it possible to examine the interconnectedness between the different types of investors, which is a result of common holdings in the same security and the holdings of the same investor in multiple securities. The data can also be connected with other databases to obtain a comprehensive and broad picture of the risks facing economic players and to generate an integrated view of assets and liabilities.

During a crisis and/or a period of market uncertainty, the need to analyze risks and trends in the holdings of a particular sector and in specific instruments becomes acute, and it is necessary to adapt the Bank of Israel's policy accordingly.

An example of this is the analysis of information from data published by the Bank of Israel on the behavior of nonresidents at the onset of the COVID-19 crisis and its impact on the Israeli stock market<sup>10</sup>

### ii. Policymaking

The collection and analysis of the information make it possible to assess the impact of macroprudential policy measures on the public's asset portfolio. This information enables

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<sup>10</sup> [Nonresidents' investments on the Tel Aviv Stock Exchange during the COVID-19 crisis](#)

policymakers to examine unique phenomena and implement efficient measures tailored to the characteristics of the different sectors operating in the market, with the goal of supporting the economy's financial stability. For example, a change in monetary policy is expected to affect the value of certain securities, which will differentially impact individuals in the economy based on their holdings of these securities.

Based on the disaggregated information available in the database and the processing of various aggregates, it is possible to carry out analyses and research related to the following: characteristics; behavior; financial activity of the various sectors; research related to the information, such as household characteristics versus those of institutional entities; holdings of debt instruments by various sectors according to period to maturity; etc.

An example of data analysis in the case of securities holdings can be found in Box 4.2 "Household Investments in Securities" in Chapter 4 of the Bank of Israel *Annual Report* for 2021<sup>11</sup>, which analyzes the financial behavior of households during the COVID-19 period.

### iii. Production of financial statistics for the State of Israel

Data on securities holdings are necessary for the production of financial statistics according to standards set by international organizations such as the International Monetary Fund (IMF).

For example, securities data are needed to meet the IMF's requirements according to the SDDS+ standard (Special Data Dissemination Standard).<sup>12</sup> As part of the SDDS+ program, Israel has committed to providing the IMF with a detailed matrix of bond holdings by sectors and issuers (whom-to-whom).

The key international outputs that are directly based on securities holdings data include:

- International Investment Position (IIP) and the economy's external debt.<sup>13</sup>
- The state of Israel's tradable securities portfolio vis-a-vis foreign countries, by country, sector, and currency (Coordinated Portfolio Investment Survey – CPIS<sup>14</sup>).

## 4.1 Demonstrating the benefits of the data by means of selected outputs

The data allow us to analyze the flows carried out by investors, particularly by sector, such as households, the business sector, and the financial sector, and to produce information on the value of a particular sector's holdings in a specific investment instrument. This is important in order to understand investors' behavior both in normal times and during crises.

<sup>11</sup> <https://www.boi.org.il/media/bfdlctf/chap-4.pdf>

<sup>12</sup> <https://dsbb.imf.org/sdds-plus>

<sup>13</sup> <https://www.boi.org.il/en/economic-roles/statistics/external-sector/israel-s-international-investment-position-iip/>

<sup>14</sup> <https://data.imf.org/CPIS>

The following are examples of in-depth analysis of such information:

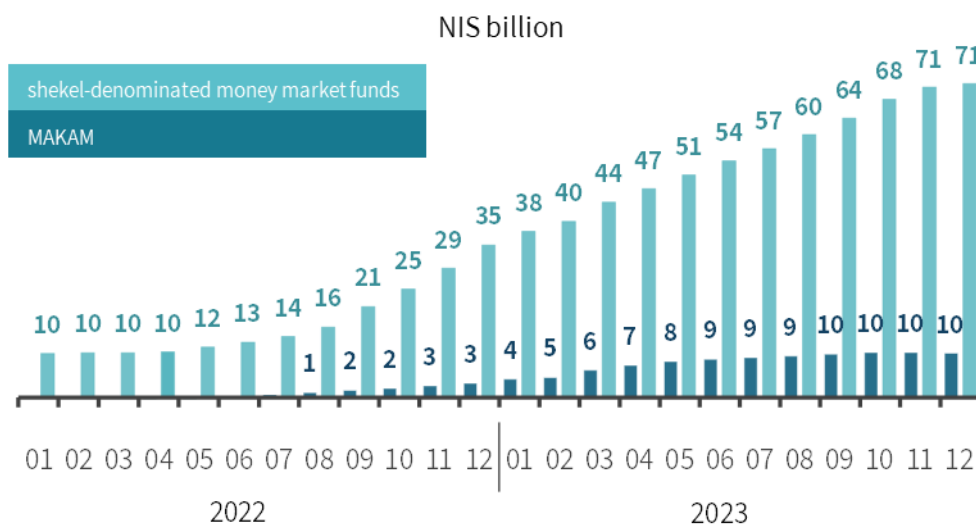
During 2022, when the Bank of Israel began raising interest rates<sup>15</sup>, the question arose as to whether households were using a variety of other financial investment instruments in addition to deposits.

Investment in MAKAM and money market funds can be a substitute for bank deposits, and it is therefore important to determine whether households increased their investment in these products.

Figure 8 shows households' positions in Israeli shekel-denominated money market funds and in MAKAM.

The Figure shows that during 2022–3, in parallel to the rise in interest rates, there was a significant increase in the value of household holdings of shekel-denominated money market funds, and in their holdings of MAKAM—from a negligible balance to a balance of about NIS 10 billion at the end of 2023.

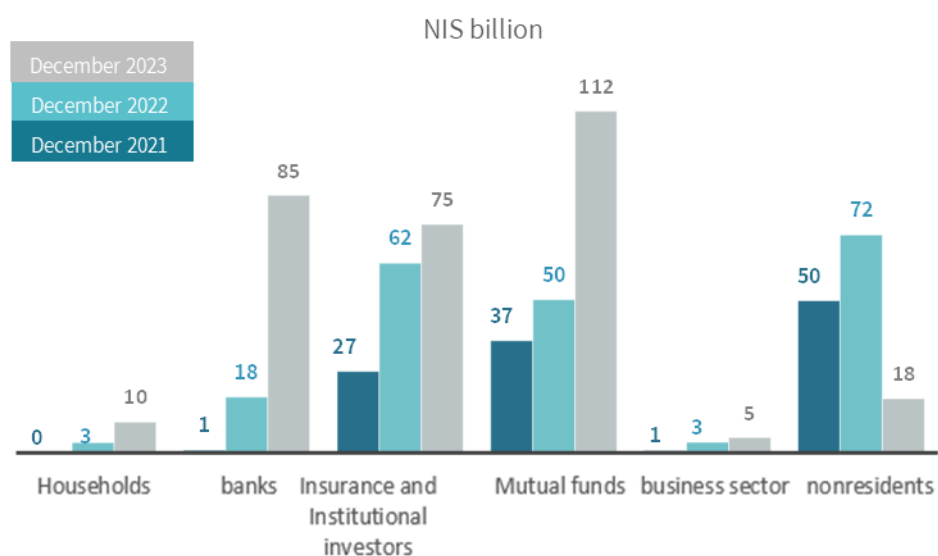
Figure 8: Household positions in MAKAM and shekel-denominated money market funds



<sup>15</sup> At the beginning of 2022, the Bank of Israel interest rate stood at 0.1 percent. At the end of 2023 it stood at 4.75 percent.

The following chart refers to the various sectors' overall holdings in MAKAM, and shows that most sectors significantly increased their MAKAM position in 2022–3, alongside a substantial issuing of MAKAM by the Bank of Israel.

Figure 9: Distribution of MAKAM holdings by main sectors<sup>16</sup>



In periods of uncertainty, such as 2022–3 (the global slowdown, high interest rates, the impact of judicial reform on financial markets, the Swords of Iron War and fighting in northern Israel), it is valuable to monitor the various sectors and analyze the developments in them. The following charts present the cumulative investment by the main sectors in 2022–3 in securities traded domestically and abroad, by instrument:

<sup>16</sup> An estimate was carried out in some of the sectors in order to correct for repo transactions that were reported by the two sides.

figure 10: cumulative investment **by households** in securities traded -2022 domestically and abroad, by instrument, 2022-3, NIS billion

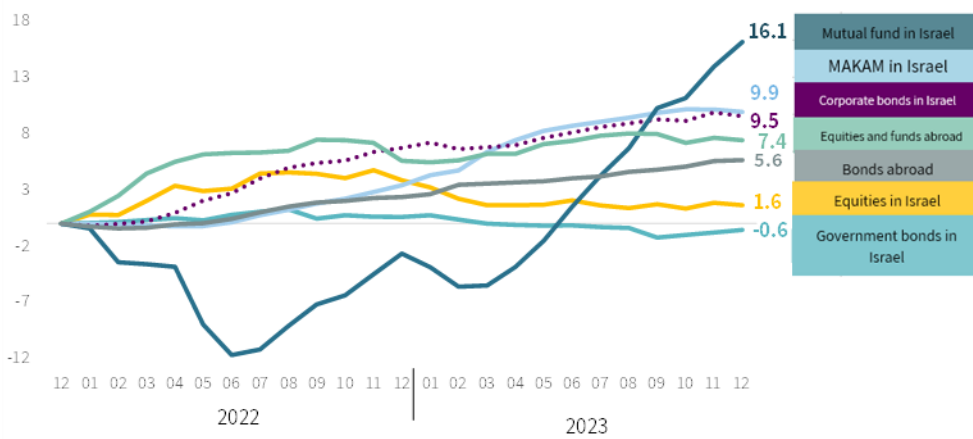
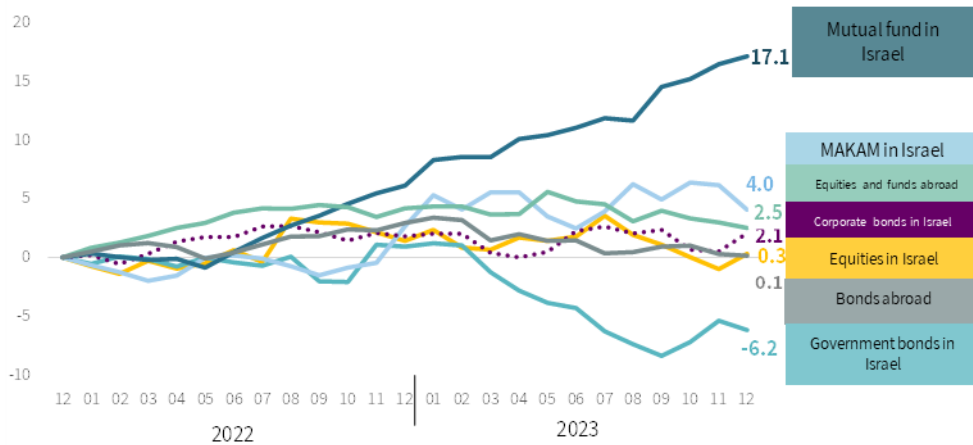


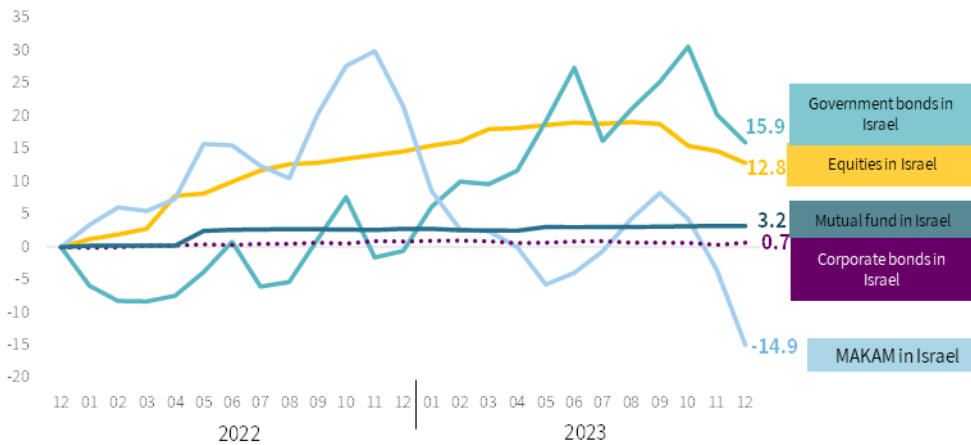
Figure 10 shows the investment by households in mutual funds in Israel in 2023 relative to net redemption in the previous year. In addition, households continued to acquire makam and corporate bonds, both domestic and foreign.

Figure 11: Cumulative investment **by the business sector** in securities traded domestically and abroad, by instrument, 2022-3, NIS billion



Similar behavior characterized the business sector (Figure 11), which invested NIS 17.1 billion in mutual funds in Israel in 2022-3 but sold NIS 6.2 billion in government bonds

Figure 12: Cumulative investment by nonresidents in domestic and foreign securities, by instrument, 2022–3, NIS billion



On the other hand, nonresidents (Figure 12) invested significantly in government bonds (NIS 15.9 billion) and in equities in Israel (NIS 12.8 billion). The data also show that nonresidents' activity in MAKAM and government bonds was not uniform throughout the period. Since October 2023, with the outbreak of the Swords of Iron War, nonresidents made net sales of government bonds and MAKAM.

## 5 .Conclusion

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