



The  
**Annual  
Report  
2022**

Government Debt Management Unit  
Accountant General's Office  
Ministry Of Finance

# The Annual Report 2022

Government Debt Management Unit  
Accountant General's Office  
Ministry Of Finance

# Table of Contents

## Remarks of the Accountant General

### Executive Summary

Debt-to-GDP Ratio .....	6
Interest Expenses Related to Government Debt.....	6
Israel's Credit Rating.....	7
2022 Capital Raising .....	7
Government Debt Stock.....	7
Government Debt Risk Indices .....	8
Designated Bond Reform - Yield Guarantee Mechanism .....	8
External Debt.....	9
Government Debt in Foreign Currency .....	9
Secondary Market Trading in Government Bonds .....	9

### Macro-Economic and Market Summary

Market Summary and Macro-Economic Impact on Debt Management.....	12
The Global Economy.....	12
Israel .....	13
Debt Management Policy .....	14

### Strategy

Government Debt Management Goals .....	16
Issuance Strategy .....	16
Tradable Domestic Channel .....	16
Issuance Amount.....	17
Launching New Series in the Tradable Domestic Market.....	19

Market Making .....	19
Foreign Channel.....	19
Non-Tradable Domestic Channel.....	19

## Primary Market

### Issuances..... 22

Tradable Domestic Debt .....	22
Tradable Funding in the Domestic Market .....	23
Coverage Ratio.....	23
Switch Auctions .....	24
Buyback Auctions.....	25

### Global Debt..... 26

Sovereign Issuances.....	26
Issuance in Global Markets .....	27
First Green Issuance .....	27
Private Placements.....	27
Issuances through the Bonds Organization...	28
Issuances Guaranteed by the U.S. Government .....	28
Loans From Foreign Governments and Other Loans.....	28
Credit Rating of the State of Israel.....	29
The State of Israel in the Eyes of the Rating Agencies .....	29

### Green Bond..... 30

Background.....	30
Green Bond Framework .....	30
Green Bond.....	31

## Secondary Market

Market Making in Government Bonds .....	34
---	----

Primary Market Ranking .....	34
Secondary Market Ranking .....	34
Trading Volumes in Government Bonds .....	36
The trading distribution in the various channels.....	36
Yield Curves .....	37
Bond Lending Facility.....	37
Breakdown of Holdings in Tradable Government Bonds .....	38
Benchmark .....	39

## Debt Portfolio

Government Debt .....	42
The Debt-to-GDP Ratio .....	43
Interest Expenditures.....	44
Government Debt Risk Management.....	46
Average Series Size and the Number of Series.....	50

## Non-Tradable Funding

Non-Tradable Funding in 2022.....	52
Designated Bond Reform.....	53
Implications and Challenges Before the Reform .....	53
The New Mechanism - Yield Guarantee Mechanism .....	55
Implications of the New Mechanism.....	55

## Organizational Chart

# Remarks of the Accountant General

The year 2022 was characterized by high levels of economic uncertainty. Emergence from the COVID-19 crisis and the global recovery led to rising rates of inflation worldwide. This combined with rising demands, alongside Russia's invasion of Ukraine, resulted in a marked increase in commodity prices, especially energy prices.

The rise in inflation rates led global central banks to shift from an expansionary monetary policy to a contractionary one, under which sharp interest rate increases were implemented. Israel was also affected by the rise in global inflation. Year-over-year inflation in Israel exceeded the Bank of Israel's target range reaching 5.3% at the end of 2022. However, even at its peak, Israeli inflation remained significantly lower than the inflation rate recorded in most other developed countries.

2022 was also notable because of a large increase of tax revenues, as well as a significant reduction in the deficit. Israel recorded a budget surplus for the first time since 1987. This created a substantial reduction in the level of debt - down to 60.8% as a percent of GDP. These figures attest to the resilience of the Israeli economy.

Along with the increase in tax revenues, there was also a decline in financing needs. Given this, the Government Debt Management Unit (GDMU) had a low funding year by historical comparison, raising a sum of roughly NIS 63 billion in 2022. As with previous years, most of the funding was carried out in Israel's tradable domestic market. In addition to tradable domestic funding, in January 2022, an issuance of EUR 1.5 billion for a 10 year term was carried out in the European capital market. The deal was executed at a yield of 0.625% and represents the least expensive issuance carried out by the State of Israel in international markets. The bond issuance reflects a substantial vote of confidence by international investors in the resilience of the Israeli economy. In January 2023, a 10-year, USD 2 billion green bond issuance was carried out in the international markets. The issuance recorded an impressive demand equal to six times the amount issued. Additionally, the issuance was carried out at a low spread of 95 basis points to the comparable U.S. bond. The issuance was preceded by complex staff work led by the Finance Division, within the framework of which the Green Framework document was written, which details for international investors the extensive activity being carried out in the field, by the current and previous governments.

In addition, in 2022, as part of a historical amendment to the Control of Financial Services (Provident Funds) Law, a yield guarantee mechanism came into effect, replacing the issuance of non-tradable "Arad" bonds. The new mechanism is expected to streamline the government debt management and reduce government expenditure from the issuance of "Arad" bonds.

Throughout 2022, Israel's credit rating was reaffirmed by rating companies Moody's, Fitch, and S&P. Additionally, Moody's upgraded Israel's rating outlook from "stable" to "positive" over the course of the year. In March 2023, Fitch reaffirmed Israel's A+ credit rating and left its "stable" outlook. In April 2023, Moody's reaffirmed Israel's A1 credit rating and downgraded its outlook from "positive" to "stable". In May 2023, S&P reaffirmed Israel's AA- credit rating and left its "stable" outlook.

I would like to thank the GDMU employees in the Finance Division for efficient and high-quality debt management in a complex economic environment. In particular, I would like to give special thanks to the team for the important implementation of the designated bond reform and for the successful green bond issuance in the international market. Well done.

Respectfully,

**Yali Rothenberg**  
Accountant General  
Israel Ministry of Finance





# **EXECUTIVE SUMMARY**

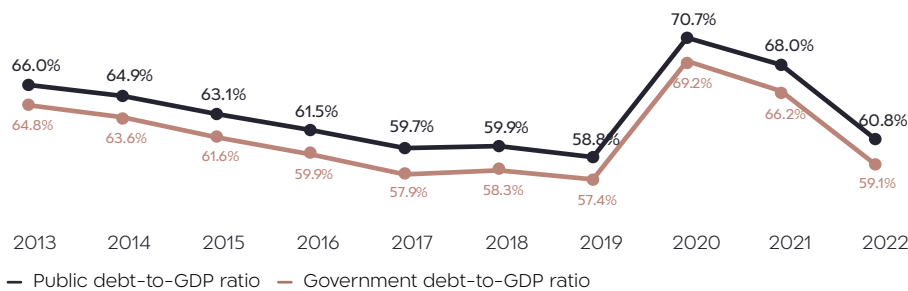
**We are pleased to submit the Annual Report for 2022 on behalf of the Government Debt Management Unit (GDMU) in the Accountant General's Department**

## Debt-to-GDP Ratio

Over the past decade, the State of Israel has successfully reduced its debt-to-GDP ratio compared to other countries. The consistent trend toward lowering the debt-to-GDP ratio is a direct result of responsible economic policy that bolsters the financial strength of the state. In 2022, the public debt-to-GDP ratio fell by roughly 7.2% compared to 2021 and stood at 60.8%. In addition, the government debt-to-GDP ratio (excluding local authorities) fell by roughly 7.1% compared to 2021 and stood at roughly 59.1%.

Following a marked increase in the debt-to-GDP ratio in 2020, in 2021 it once again returned to its downward trend due to increased government revenues from taxes, in addition to a revaluation of the Israeli Shekel against the U.S. Dollar, which contributed to a partial offset of the foreign currency-denominated debt. In 2022, there was a continued decrease in the debt-to-GDP ratio given lower than projected financing needs and continuation of the positive tax revenue trend from 2021. The debt reduction was partially offset by an appreciation of CPI-linked debt and an appreciation of foreign currency-denominated debt due to a devaluation of the Israeli Shekel against the U.S. Dollar and the Euro.

Government and public debt-to-GDP ratio, 2013-2022

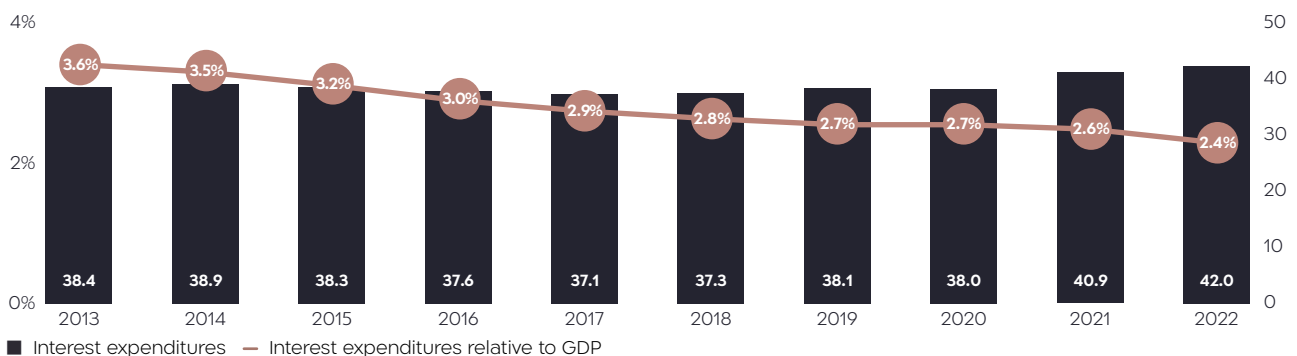


The decrease in the debt-to-GDP ratio in 2022 constitutes a direct continuation of the longer-term trend recorded up to 2020, under which the government debt-to-GDP ratio fell below 60%.

## Interest Expenses Related to Government Debt

The rate of interest expenditure relative to GDP in 2022 stood at 2.4% compared to 2.6% in 2021. This follows the downward trend recorded over the past decade. Although the total nominal expenditure for interest has increased over the years, a continual reduction was recorded in interest expenses relative to the GDP. The rate of expenditure has become smaller in recent years because of historically low refinancing costs relative to significant GDP growth, and this is despite the interest expenditure having been affected by the increase in inflation and the increase in yields of government bonds.

Interest expenditures relative to GDP, 2013-2022 (NIS billions, %)



## Israel's Credit Rating

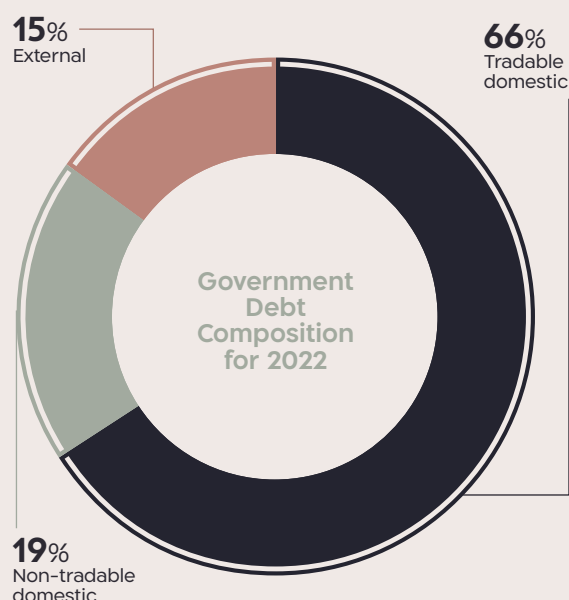
The credit rating of the State of Israel remained unchanged in 2022. In April 2022, Moody's affirmed Israel's A1 credit rating and changed its outlook to "positive" from "stable". In April 2023, Moody's once again affirmed Israel's rating at A1, and updated their outlook to "stable" from "positive". In March 2023, Fitch affirmed Israel's A+ credit rating with a "stable" outlook. In May 2023, S&P affirmed Israel's AA- credit rating with a "stable" outlook.

Rating company	Rating of Foreign Bonds	Outlook
Moody's	A1	Stable
S&P	AA-	Stable
Fitch	A+	Stable

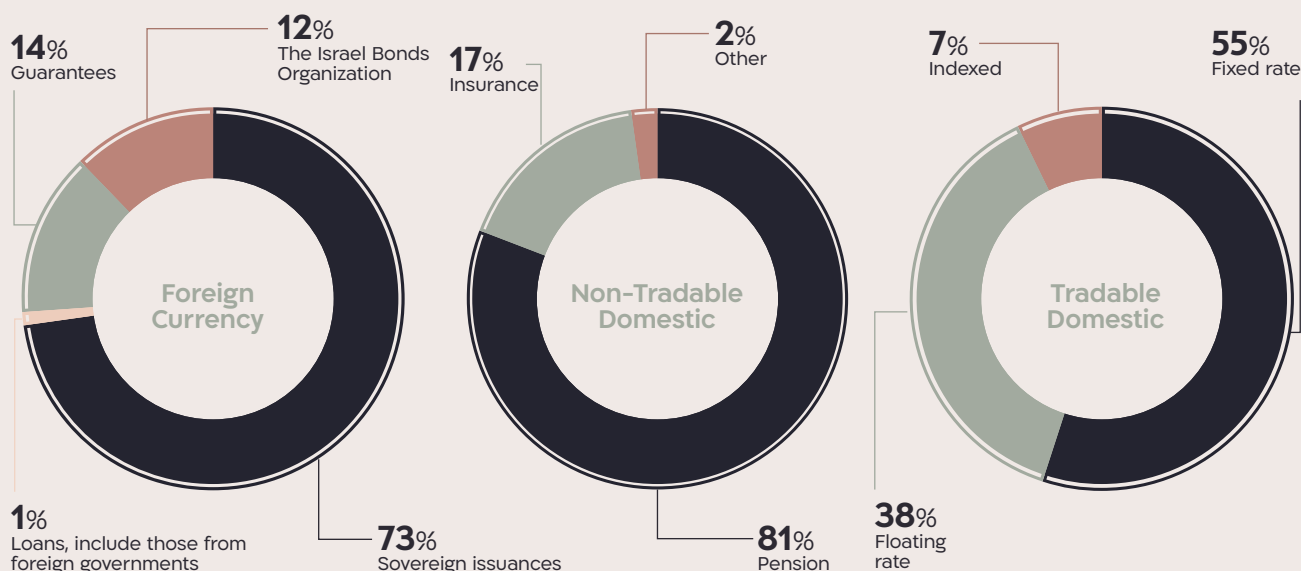
## 2022 Capital Raising

In 2022, the GDMU raised approximately NIS 63 billion, compared to roughly NIS 166 billion in 2021. The volume of funding in the tradable domestic channel amounted to roughly NIS 42 billion, the volume of funding in the non-tradable domestic channel amounted to roughly NIS 12 billion and in the external channel, the volume of funding amounted to roughly NIS 9 billion.

In 2022, the government debt was reduced by about 1% and stood at roughly NIS 1,037 billion compared to approximately NIS 1,044 billion in 2021. The bulk of the nominal reduction in the government debt resulted from negative net funding due to a decline in financing needs. In contrast, market factors, led by an increase in inflation and a devaluation of the Israeli Shekel against the U.S. Dollar and the Euro, contributed to offsetting the decrease in government debt.



## Government Debt Stock Inventory (%)



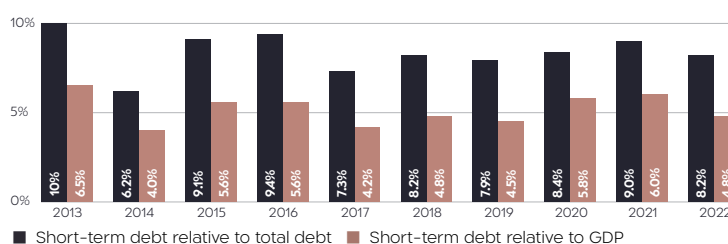
## Government Debt Risk Indices

The Rollover Ratio index fell by 0.8% relative to 2021 and stands at 8.2%. This risk index remains in the desired range, of 8% to 12%, following the implementation of the Accountant General's policy. Additionally, the short-term debt relative to GDP fell in 2022 to 4.8%.

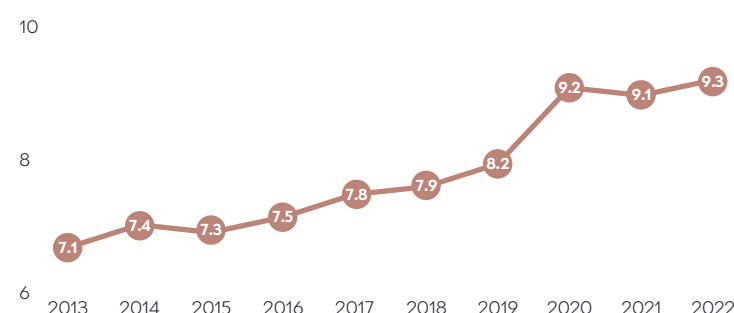
In 2022, the average term-to-maturity (ATM) of the government debt increased relative to 2021 and stood at 9.3 years compared to 9.1 years in 2021. This follows the Accountant General's policy over the past decade to extend duration amid a historically low-interest rate environment.

**In 2022, the CPI-linked debt rate stood at roughly 52% of the total debt portfolio. The main sensitivity of the debt is a change in the consumer price index.**

Short-term government debt relative to total debt and relative to GDP in 2013-2022 (%)



Average term-to-maturity of the government debt in 2013-2022 (years)



### Sensitivity of government debt and debt-to-GDP ratio to primary risk factors

	Change in government debt (NIS millions)	Change in government debt-to-GDP ratio (% of GDP)
Increase in the consumer price index (1%)	5,413	0.31%
Increase in the USD-NIS exchange rate (1%)	1,062	0.06%
Increase in the EUR-NIS exchange rate (1%)	444	0.03%

## Designated Bond Reform - Yield Guarantee Mechanism

Under Chapter III of the Economic Efficiency Law (Legislative Amendments for Attaining Budgetary Objectives for the Budget Years 2021 and 2022), 2021, the Control of Financial Services (Provident Funds) Law, 2005 (hereafter - the Law), was amended. Under the amendment to the law, Article E1 was added, which partially guarantees a yield for pension funds.

As of October 1, 2022, the yield guarantee mechanism replaced the issuance of "Arad" bonds. "Arad" bonds are government bonds linked to the consumer price index, for a 15-year term, and pay a semiannual coupon of 2.4% (or 4.8% annually). The new mechanism prescribes that instead of the pension funds being required to invest part of their asset portfolio in "Arad" bonds, they will invest the same funds in the capital market and yield a return. For these funds, the state will provide an annual yield guarantee at an indexed rate of 5.15%.

The new mechanism is expected to streamline government debt management and reduce the government expenditure resulting from "Arad" bond issuances.

→ For further details, see the Non-Tradable Debt chapter.

## External Debt

In 2022, a 10-year, EUR 1.5 billion benchmark issuance was executed. The bond was issued at the lowest cost of funding ever paid by the State of Israel in a public offering abroad.

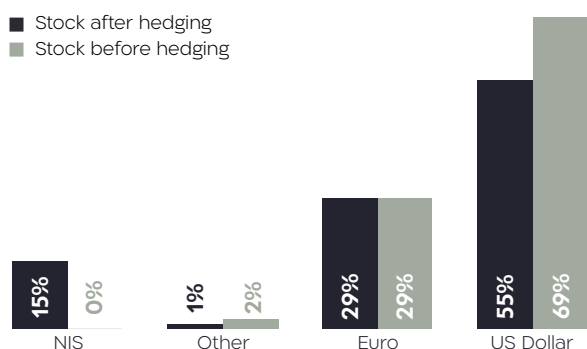
In January 2023, the government of Israel made its first public offering of green bonds. The issuance was a 10-year, USD 2 billion bond, with a coupon of 4.5%. The offering drew high demand, particularly from high-quality international investors.

→ Further details regarding the green bond offering are provided in the Primary Market chapter.

## Government Debt in Foreign Currency

In 2022, the debt denominated in foreign currency constituted roughly 15% of the debt portfolio. The debt denominated in foreign currency creates exposure of the debt stock to changes in exchange rates. To manage the exposure, the GDMU executes hedging transactions per an organized hedging plan that comprises long-term hedging transactions through Cross Currency Swaps and short-term hedging transactions such as Forwards and FX Swaps.

### Composition of exposure to foreign currency by currency distribution excluding hedging transactions and after hedging transactions



The composition of foreign currency debt is characterized by the dominance of USD debt. As of the end of 2022, and not including hedging transactions, roughly 69% of the external debt stock is denominated in USD, roughly 29% of the debt stock is denominated in Euro, and the remaining 2% is denominated in other currencies. After accounting for the executed hedging transactions, the exposure of the external debt stock to the USD, Euro, and other currencies falls to 55%, 29%, and 1%, respectively.

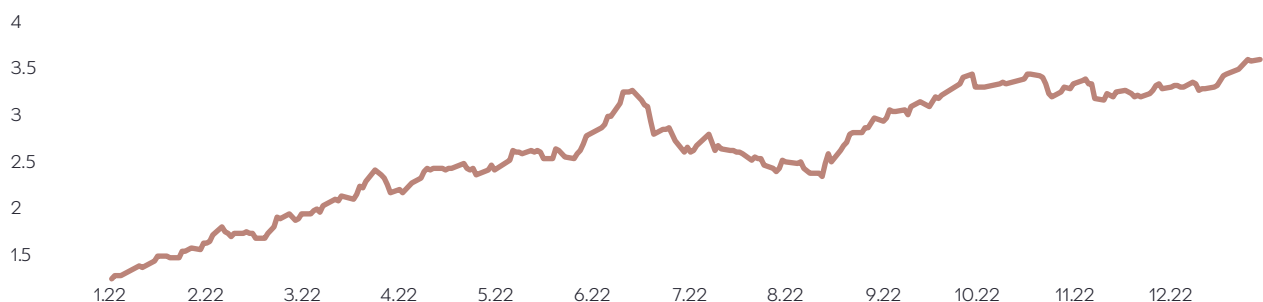
As a result of hedging transactions, roughly 15% of the external debt stock substantively becomes NIS.

## Secondary Market Trading in Government Bonds

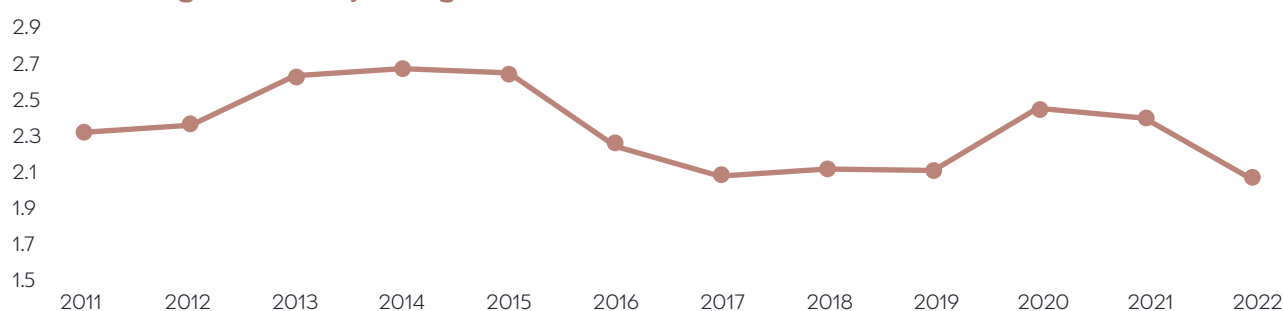
Recent government bond trading in Israel is characterized by a sharp increase in yields both on the Shekel curve and for indexed bonds, amid the tightening of the monetary policy of the Bank of Israel, as a response to a rising rate of inflation. Following the trend in 2021, 2022 was also characterized by high volatility. The yield for a 10-year ILGOV bond, as of the end of 2022, stood at 3.59%, compared to 1.02% at the end of 2021.

Amid the trend of monetary contraction and uncertainty in the markets, 2022 was characterized by low trading volumes compared to 2021. The average daily trading volume on the Tel Aviv Stock Exchange in government bonds stood at roughly NIS 2.1 billion, compared to roughly NIS 2.5 billion in 2021.

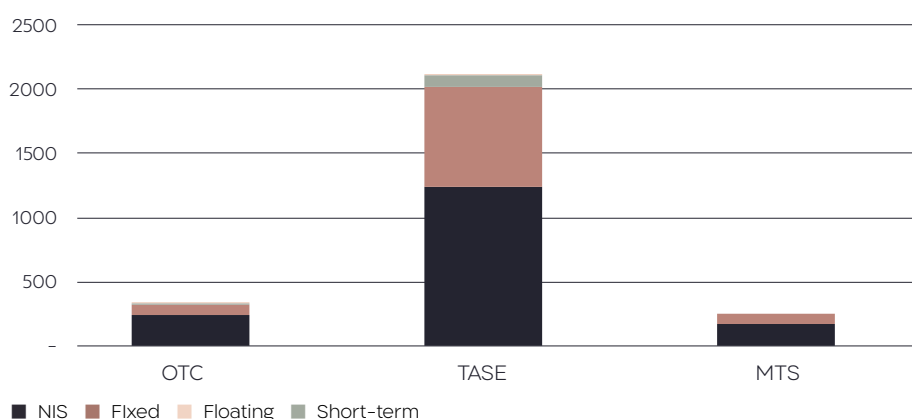
### 10Y ILGOV Yield



### Annual trading volume, daily average



### Annual Trading Volume in Different Markets (NIS millions)



## In Summary,

With a shift to a rising inflation environment, following a decade of low inflation, 2022 was a challenging year for the global economy. This challenge necessitated an active response by central banks around the world, which implemented sharp interest rate increases. This led to significant changes in the financial markets and particularly for the funding environment. Concurrently, and despite the changes in market conditions, a marked increase was recorded in tax revenues. As a result, the funding needs for 2022 fell significantly.

Of the total government funding, roughly 15% was raised through the external channel, roughly 19% through the non-tradable channel, and roughly 66% was raised by issuing bonds in the tradable domestic channel. The funding split in the tradable domestic channel was 73% fixed-rate, 23% indexed, and roughly 4% via floating rate bonds.

Government debt funding was carried out in a flexible manner while adapting to the changing market conditions. Issuances follow three main objectives - managing the government treasury efficiently, supporting the needs of the domestic bond market, and reducing debt portfolio management costs - while taking into account the multi-year government debt management strategy.

As in previous years, the Government Debt Management Unit (GDMU) works to develop and implement new tools for effective and efficient debt management. The projects that the division promoted in recent years included successful implementation of the designated "Arad" bond reform, which comprised a historical amendment to the Control of Financial Services (Provident Funds) Law, facilitated more efficient and flexible management of government debt, as well as executed a green government bond global issuance, for the first time in Israel.

For all this, we would like to thank the GDMU employees for their high-quality and dedicated work.

We hope you enjoy this year's Annual Debt Management Report.

Respectfully,

**Philip Yhelzon**  
Head of the  
Government Debt Unit

**Gil Cohen**  
Senior Deputy Accountant General  
Head of Finance, Debt  
and Credit Division



**MACRO-  
ECONOMIC  
AND  
MARKET  
SUMMARY**

# Market Summary and Macro-Economic Impact on Debt Management

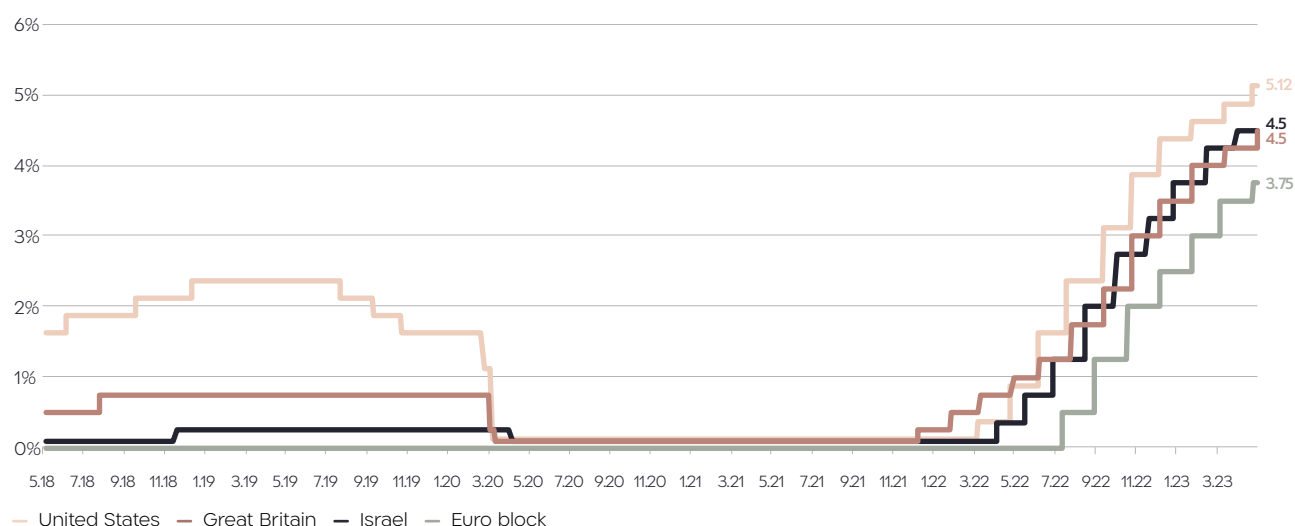
## The global economy

The year 2022 was a turning point in the global economy. While 2020 and 2021 were characterized as years of crisis and recovery, 2022 was characterized by its transition to a narrative of apprehension of inflation and recession. The increase in inflation data has several integrated explanations: a shortfall on the supply side created during the Covid-19 crisis and a sharp increase in demand that started the pandemic began to wane; expansionary monetary policy before and, even more strongly, during the Covid-19 crisis; and the Russian invasion of Ukraine, which brought about disruptions in the supply of commodities and the imposition of sanctions leading to a steep increase in commodity prices and, in particular, energy prices, with an emphasis on those European countries most dependent upon Russia's gas supply.

The peak of the inflation rate was roughly 9.1% in the United States, 10.6% in Europe, and 11.1% in Great Britain. In Israel, the inflation rate reached its peak of 5.3% at the end of 2022 - the highest point since 2008.

In response to increased inflation rates around the world, many countries started a process of expedited monetary contraction. The frameworks of which included sharp interest rate increases. In the United States, the Federal Reserve increased the interest rate in seven consecutive meetings, from a level of 0%-0.25% at the beginning of 2022 to a level of 4.25%-4.5% at the end of the year. In 2023, it increased the interest rate in three consecutive meetings, and as of May, the interest rate is 5%-5.25%. The European Central Bank started increasing its interest rate in July 2022, from 0% to 2.5% through four rate increase announcements. In 2023, it increased the interest rate, to a level of 3.75%. The Bank of England increased the interest rate from 0.25% at the beginning of the year to a level of 3.5% in December 2022, and in 2023 increased it to a level of 4.5%.

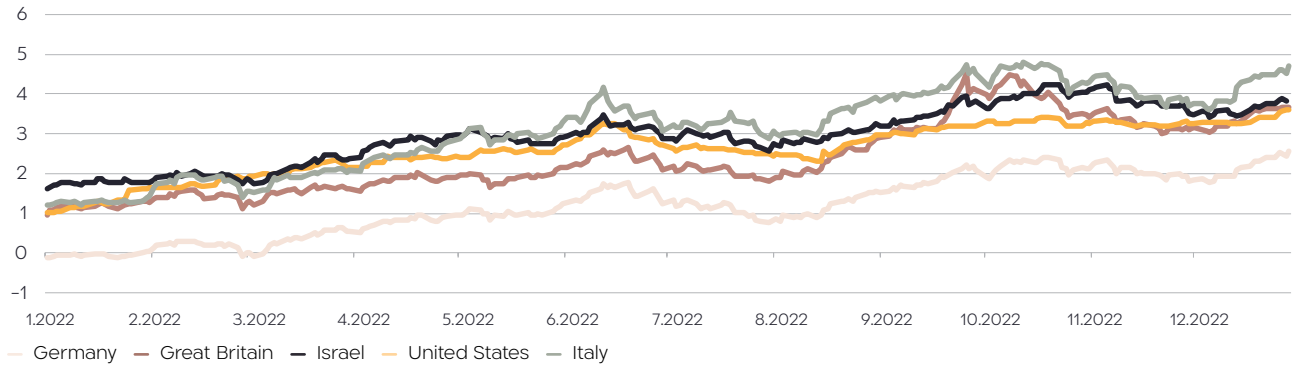
## The interest rate of central banks



The main share indices worldwide fell in 2022. This can be partially attributed to the rise in global interest rates resulting from increased inflation. The S&P 500 index decreased in 2022 by approximately 19% and the NASDAQ closed the year down roughly 34%. The Israeli capital market was exceptional with surplus yields, as compared to similar indices in the United States, whereby the TA 35 and the TA 125 indices fell by roughly 9% and 12% respectively.

As with main share indices, the redemption yield for government bonds worldwide increased in 2022, in part due to increased global interest rates and inflation. In the United States, the 10-year government bond yield increased from a level of 1.51% at the beginning of 2022 to a level of 3.88% at the end of the year, whereas the yield on a similar tenured bond issued by the Israeli government increased from a level of 1.02% at the beginning of 2022 to a level of 3.59% at the end of the year.

### International Comparison - Government Bonds Yield to Maturity



## Israel

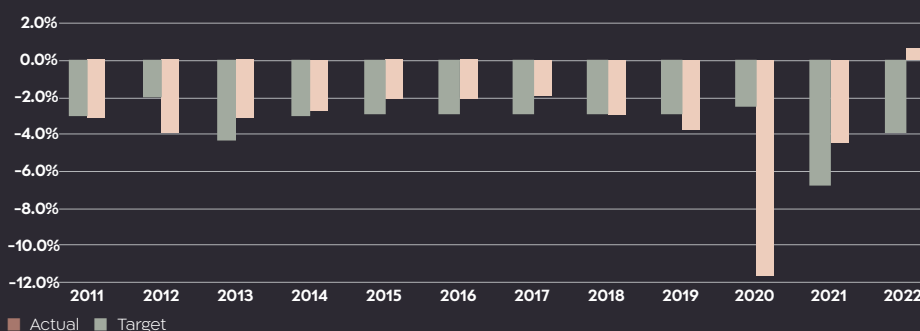
The Israeli economy in 2022 was characterized by high growth of 6.5%. The labor market was tight with the unemployment level relatively low at 4.3% in December. There was also an increase in labor force participation from 60.1% in December 2021, to 61% in December 2022. Despite the global slowdown, Israel's GDP growth rate in 2022 was 6.5%, two times higher than the average growth rate in OECD countries.

Inflation in Israel rose in 2022, partially attributable to the increase in demand and commodity prices stemming from Russia's war in Ukraine. The annual inflation rate increased from a level of 2.8% at the end of 2021 to a level of 5.3% in December 2022, the highest since 2008, exceeding the Bank of Israel's inflation target range. Nevertheless, the inflation rate recorded in Israel was significantly lower than in the majority of developed countries, and the inflation forecast for the upcoming year, as of the end of 2022, is within the inflation target range of the Bank of Israel (biased toward the top of the range).

Given the inflation data, the Bank of Israel's monetary committee is taking a contractionary monetary policy. As such, it is ending the use of special instruments used during the Covid-19 crisis, for example, it is discontinuing foreign currency purchases starting from February 2022. It is also accelerating the rise of its key interest rate (front loading). The monetary committee of the Bank of Israel increased the interest rate seven consecutive times in 2022, from 0.1% to a level of 3.25%. In January and February 2023, two additional increases took place and as of March 2023, the interest of the Bank of Israel is 4.25%.

On the fiscal side, a budget surplus was recorded in 2022 of approximately NIS 9.8 million, which is roughly 0.6% of GDP. The deficit target for 2022 was 3.9% of GDP. This is the first time since 1987 that a budget surplus was recorded.

### The Development of the Deficit as a Percentage of GDP

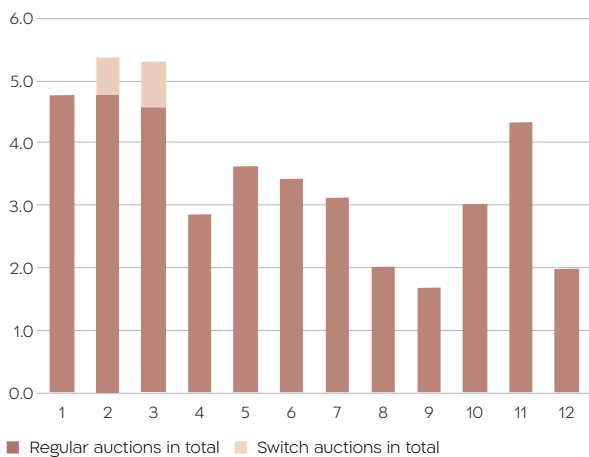


The decrease in the deficit and the transition to a surplus arose from the significant increase in revenue from direct taxes, given the rapid growth in the economy, alongside a decrease in expenses on the economic aid programs launched during the Covid-19 crisis.

## Debt Management Policy

Debt financing in 2022 was performed according to the governmental strategic plan for debt management, with some tactical adjustments over the year. 2022 was characterized by a decrease in financing needs, given the ongoing recovery of the economy from the Covid-19 crisis, alongside a sharp increase in the inflation rate. The financing policy was based on diversified financing sources, whereby financing in the local tradable market remained the main source for deficit financing. In total, the issuance of government bonds in the local market, including switch auctions, amounted to about NIS 42 billion, compared to NIS 119 billion in 2021.

### The Distribution of Tradable Debt Funding



In January 2022, the Israeli government issued bonds in the international market totaling Euro 1.5 billion. The bonds were issued at the lowest financing cost ever for the State of Israel.

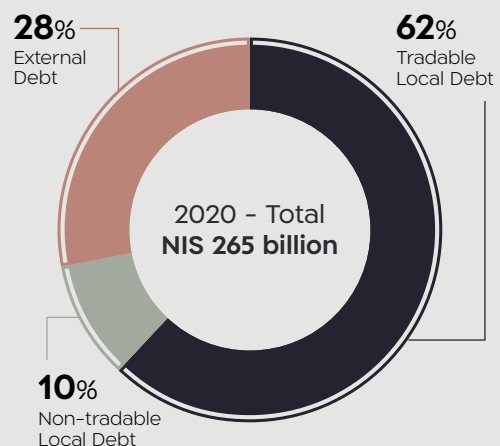
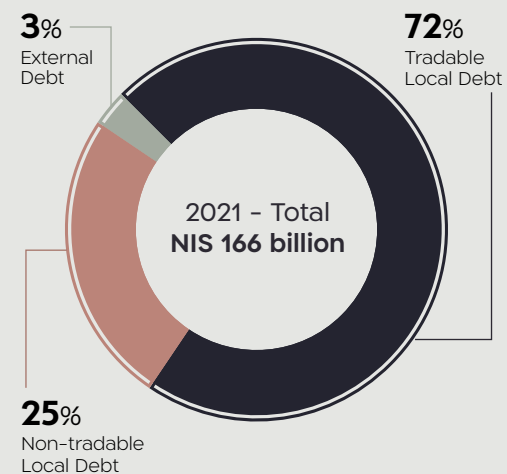
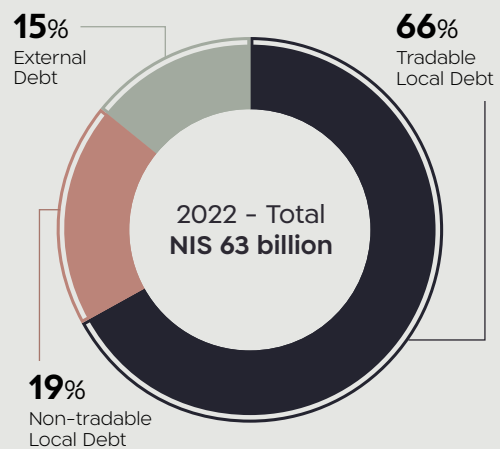
In January 2023, the Israeli government issued for the first time a green bond for 10 years, totaling USD 2 billion, with an interest rate of 4.5%. The issuance recorded large demand from high-quality international investors.

In the local non-tradable market, NIS 12 billion was raised in 2022. This was a sharp decrease in the scope of issuances. The reason for the drop was the pro-cyclical nature of these bonds paired with the fall of market indices.

Beginning in October 2022, the issuance of designated "Arad" bonds ended and was replaced with a yield assurance mechanism. For more details see the non-negotiable chapter.

In total, the financing in 2022 was approximately NIS 63 billion, compared to NIS 166 billion in 2021.

### Financing distribution 2020-2022





# STRATEGY

# 1

## Government Debt Management Goals

The activities of the Government Debt Management Unit (GDMU) are concentrated on financing the government's activities while serving long-term government debt management goals. This policy addresses both considerations of the state as an issuer, which works to balance cost and risk, as well as considerations of the state as a sovereign, which works to support the domestic capital market and strengthen the State of Israel's access to international markets.

The volume of debt funding directly affects Israel's debt-to-GDP ratio, as well as the interest burden on the state budget. The planned volumes of funding are based on the financing needs per the deficit target and on the refinancing needs of the existing debt. The funding channels, funding terms, and composition of issuances are determined by a strategic plan that allows for making adjustments and taking into account tactical considerations derived from changes in the financial markets and financing needs.

# 2

## Issuance Strategy

The GDMU works towards long-term planning of the tradable debt funding in the domestic and foreign markets using the tiered model; the principles of the model:

**Gradual Redemption Profile** - creating a multi-year, continuous, and tiered maturity structure.

**Fixed funding policy** - issuing fixed amounts for fixed terms each year (Benchmarks).

**Steady State** - planning and maintaining the existing maturity structure.

In addition, the GDMU works to smooth the funding over the year, by preplanning issuances, switch and buyback auctions, as well as using short-term instruments to manage cash flows, while maintaining a sufficient liquidity cushion throughout the year.

## Tradable Domestic Channel

The tradable domestic channel is the main funding channel that allows the state, in its capacity as an issuer, convenient access to the capital market, even under conditions of uncertainty and changing financing needs. This channel has strategic importance in the state's capacity as a sovereign as it forms the basis for the existence and pricing of other financial instruments required for the efficient functioning of the private and business sectors, such as loans, mortgages, derivatives, and others.

**The following are the key principles of the funding strategy in the tradable domestic market:**

- Focusing on the Shekel - The funding in the tradable domestic market is biased towards the Shekel channel because of the high exposure of the debt portfolio to the consumer price index and the need to reduce this exposure. At the end of 2022, the volume of indexed debt stood at roughly 52%, most of it from the issuance of debt in the non-tradable channel, stemming from laws or agreements.
- Supporting the indexed curve - With the elimination of the issuance of non-tradable "Arad" bonds to pension funds as part of the "yield guarantee"

reform, the GDMU currently issues indexed bonds only in the tradable domestic market. This is part of GDMU's policy of diversifying financing sources and meeting the existing demand for these bonds in the market.

**Additional tools for managing market and refinancing risk in the tradable domestic market:**

- The GDMU issues floating rate bonds in the tradable domestic market taking into account funding costs, the spread of risk, diversification of financing sources, and increased flexibility of debt management.
- Extending the government debt - Over the past decade, the low-interest environment has supported the GDMU's strategy to gradually and significantly extend the average time to maturity (ATM) of the debt, which in 2022 reached its highest level in the last ten years and stood at 9.3 years. Currently, GDMU's strategy concerning debt maturity combines funding cost and refinancing risk management considerations.

# 3

## Issuance Amount

The funding strategy is determined through several analyses that rely, among other things, on models, indicators, and simulations that minimize the cost of the debt given a desired level of risk. In addition, the funding strategy is based on qualitative considerations, such as supporting and extending the government bond curve, enhancing the bond liquidity, expanding the investor base, and others. The funding strategy relies on three key funding channels:

1. Tradable domestic channel
2. Non-Tradable domestic channel
3. Foreign channel

### Issuing tools

Funding in the domestic market is executed through issuance auctions that are mostly carried out weekly. In addition, the GDMU uses additional tools in the domestic market that help to support its objectives as part of a long-term strategy and to manage the government's liquidity. Below is a breakdown of the primary tools:

#### Switch Auctions

Switch auctions assist in the strategic planning of government debt management and constitute an integral part of the annual funding plan. Over the past three years, the average funding via this instrument stood at about 12% of tradable domestic funding. Goals of the switch auctions:

- **Reducing refinancing risk:** The GDMU carried out switch auctions of bonds with short-term maturities (less than one year). These auctions enable the smoothing of the maturity and funding curve over the year and thereby reduce the refinancing risk.
- **Cash flow management:** Switch auctions are carried out using the Cash Neutral method. Under this method, the monetary value of the issued bonds and the purchased bonds is the same, so refinancing is accomplished without using the government treasury balances. These auctions serve as one of the tools for managing the government's cash flows in that they enable the timing of the funding and maturities of the bonds throughout the year and between years.

#### Switch Auctions Policy:

**Channel:** Switch auctions constitute an inseparable funding channel from the annual funding plan, where the bonds are selected according to the strategy of the funding plan and with tactical adjustments to market conditions.

**Frequency:** The GDMU strives to carry out switch auctions continually, subject to market conditions and additional debt management considerations.

**Selection of purchased bonds:** In addition to carrying out switch auctions, in which bonds with short-term maturities (less than one year) are replaced with new bonds with long-term maturities, the GDMU uses switch auctions to increase the liquidity of new series, in which new on-the-run bonds are issued and off-the-run bonds are purchased.

**Selection of issued bonds:** The selection of off-the-run bonds that are issued within the framework of switch auctions depends, among other things, on market demands, liquidity enhancement, supporting relatively small series, and correcting distortions in the secondary market.

**Smoothing maturities and funding:** Carrying out switch auctions for bonds maturing in the next calendar year (cross-year) to smoothen maturities and funding between the years.

### Buyback Auctions

A buyback auction allows the state to repay a debt before maturity against a cash payment. These auctions are an accepted tool in the debt management policy and they affect the structure of the debt portfolio and the debt costs.

Goals of the tool:



#### Buyback Auctions Policy:

**Frequency:** The GDMU strives to carry out buyback auctions continually, subject to market conditions and additional debt management considerations.

**Tender size:** The volume of the auction depends on the state's financing needs, the level of the treasury, and the prices offered at the auction.

**Smoothing maturities and funding:** As with switch auctions, carrying out buyback auctions for bonds maturing in the next calendar year (cross-year) enables smoother maturities and funding over the years.

Buyback auctions are mostly carried out for bonds with short-term maturities. However, in 2022, several buyback auctions were carried out, in which bonds with long-term maturities (above 1 year) were purchased. When selecting the bonds participating in buyback auctions, the GDMU takes into account, among other things, the effect on the tradability of the bonds, savings in the interest budget, and potential demands.

### Short-Term Bonds

The issuance of short-term bonds (time to maturity of less than 1 year) is carried out as part of cash flow management. The state issues short-term bonds following cash flow needs and market conditions.

The issuance of short-term bonds and the volume of the monthly issuance are determined depending on the financing needs of the state and are derived from considerations of efficient cash flow management. Throughout 2022, the tool was not used amid the decline in financing needs and the desire to support the liquidity of the long-term bonds in the secondary market. If it is decided to carry out issuances of short-term bonds in 2023, it will be under the following model:

- Between the months of January to March, issuance of a series maturing in November of the present year.
- Between the months of April to June, issuance of a series maturing in February of the following year.
- Between the months of July to September, issuance of a series maturing in May of the following year.
- Between the months of October to December, issuance of a series maturing in August of the following year.

As part of the debt management policy and to maintain a steady stock of short-term bonds, the size of the short-term bond series is expected to stand at roughly NIS 3 billion. Consequently, the volume of the monthly issuance of these bonds is expected to stand at roughly NIS 1 billion. It should be noted that the volume of the monthly issuance may vary significantly depending on the financing needs of the state and the need for efficient cash flow management. The volume of the monthly issuance to be determined will be published each month in the GDMU's monthly funding plan.

## 4 Launching New Series in the Tradable Domestic Market

As part of the multi-year government debt management strategy, throughout 2023, the GDMU is expected to launch new on-the-run series. The following are the series expected to be launched over the year: 5-year Shekel series in place of ILGOV 0928, a 5-year indexed series in place of ILCPI 0726, and a 10-year floating rate series in place of ILFRN 1130. The manner and timing of the replacement of the existing series will be determined, among other things, by the level of the registered capital of the replaced bond, the actual funding volumes in the tradable domestic channel, the duration of the replaced bonds, cash flow management, and government debt management considerations. The decision about the issued series may change over the year. Final notice of the issuance of a new series will be published as part of the GDMU's monthly funding plan.

## 5 Market Making

In 2022, 12 banks, 7 of which were international banks, served as primary market makers for Israeli government bonds. The principal role of the primary market makers is enhancing government bond liquidity in the secondary market and actively participating in issuances within the framework of the primary market. Primary market makers aim to support, promote, and distribute government bonds.

The primary market makers are required to meet issuance participation and purchase obligations and quote buy and sell prices in a dedicated trading arena (MTS). The primary market makers are entitled to exclusive benefits. These include issuances only to primary market makers, 'greenshoe' options, access to the government lending pool, and entitlement to participate as a counterparty in hedging transactions.

## Foreign Channel

External debt funding constitutes an additional funding channel. The GDMU regards the issuance of bonds in the international capital markets as a tool for exposing the Israeli economy to foreign investors and expanding the investor pool.

To reduce the exposure of the debt portfolio to changes in the exchange rate, the GDMU executes long-term hedging transactions through Cross Currency transactions, as well as short-term cash flow hedging through Forward and FX-Swap transactions.

Further details of debt funding in global markets can be found in the External Debt chapter.

## Non-Tradable Domestic Channel

The issuance of non-tradable bonds is executed by operation of law and per previously signed agreements. Most of the non-tradable funding consists of "Hetz" bonds that are issued to insurance companies that previously issued yield-guaranteed policies. The volume of the non-tradable bond issuance depends, among other things, on the return yielded by the insurance companies in the market. Consequently, it is impossible to accurately estimate the volume of funding in the non-tradable channel. An increase in funding needs in this channel comes at the expense of funding in the tradable domestic market.

As of October 2022, the State of Israel replaced the issuance of "Arad" bonds to eligible pension funds with a "guaranteed yield" mechanism. The volume of an "Arad" bond issuance depends on the returns achieved by the pension funds in the market and the volume of member deposits to these funds. Consequently, the "Arad" bond-based debt funding was characterized by volatility and in recent years reached large volumes, which displaced the funding in the trading channel. In light of the discontinuation of the "Arad" bond-based debt funding, the volume of funding in the non-tradable channel is expected to fall significantly.

The issuance of "Arad" bonds – non-tradable, indexed, designated government bonds bearing fixed effective annual interest of 4.86%, was discontinued as of October 2022, and replaced by a guaranteed yield mechanism.

The state attaches high importance to ensuring the stability of the yields in the pension funds and casting a security net for the pension-saving public. However, over the years this mechanism has created significant challenges both for the state budget and for government debt management.

Accordingly, under Chapter III of the Economic Efficiency Law (Legislative Amendments for Attaining Budgetary Objectives for the Budget Years 2021 and 2022), 5781-2021, it was determined that ensuring the stability of the pension fund yields would be implemented via a guaranteed yield mechanism, which would replace the existing mechanism of issuing "Arad" bonds.

Under the guaranteed yield mechanism, the pension funds will invest in the capital market in a dedicated channel (hereafter – "guaranteed yield channel") the funds previously used to buy "Arad" bonds. For these funds, the state commits to supplement a yield at an annual indexed rate of 5.15% (hereafter – "the target yield"), for five years from the day the commitment is given. After five years, a reconciliation will be made between the state and the pension funds; if the pension funds yield a lower return than the target yield, the state will pay the gap between the target yield and the yield that the pension funds yielded in the capital market. If the pension funds yield a higher return than the target yield, the pension funds will transfer the excess yield to a dedicated fund in the Bank of Israel that will be used to finance the supplementation of any future yield, if such will be necessary.

In the wake of the implementation of the new mechanism and the discontinuation of the "Arad" bond issuance mechanism, funding in the tradable channel and the external channel is expected to increase.





# **PRIMARY MARKET**

# ISSUANCES

The fundraising policy in 2022 was taken from the government debt management strategic plan. It utilized numerous funding tools, with the flexibility to make adjustments, in order to address varying financing needs and to provide support to the capital market. As in previous years, the bulk of the funding was executed via tradable bond issuances in the domestic market. In 2022, this totaled roughly NIS 41.5 billion, compared to roughly NIS 119 billion and NIS 165 billion in 2021 and 2020, respectively. Net funding in the tradable domestic market stood at a negative level of roughly NIS 46.4 billion, compared to net funding of approximately NIS 30 billion in 2021.

Throughout 2022, funding volumes and distribution were executed according to the government's financing needs resulting from the monthly deficit level and the cash flow forecast.

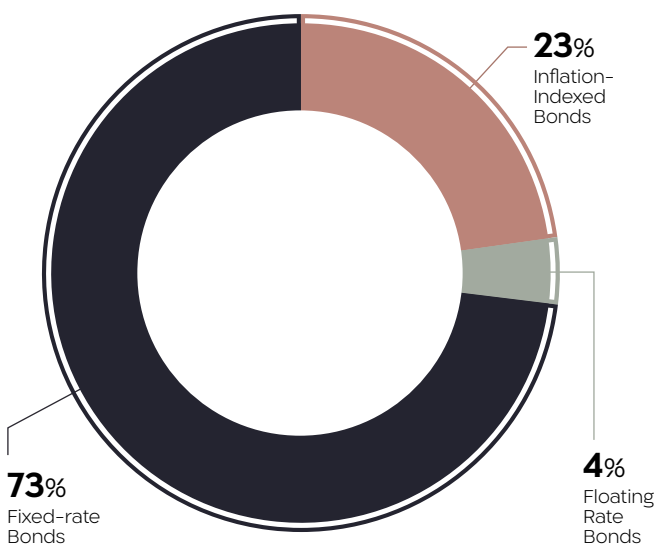
## Tradable Domestic Debt

Funding in tradable domestic debt depends on three main channels: **A fixed-rate channel, an indexed channel, and a floating-rate channel.** In accordance the debt management policy, the bulk of the funding was executed in the fixed-rate channel which constituted roughly 73% (excluding issuance of short-term bonds), compared to the funding of roughly 23% in the indexed channel and roughly 4% in the floating-rate channel. The above weightings are such to support the fixed-rate curve and to reduce the exposure of the government debt and the interest payments to the consumer price index.

**The tradable domestic debt inventory for 2022 amounted to roughly NIS 550 billion, compared to roughly NIS 584 billion in 2021.**

**The reduction of debt inventory resulted from negative net funding, which was partially offset due to linkage and exchange-rate differences.**

Tradable Debt Funding by Channel in 2022

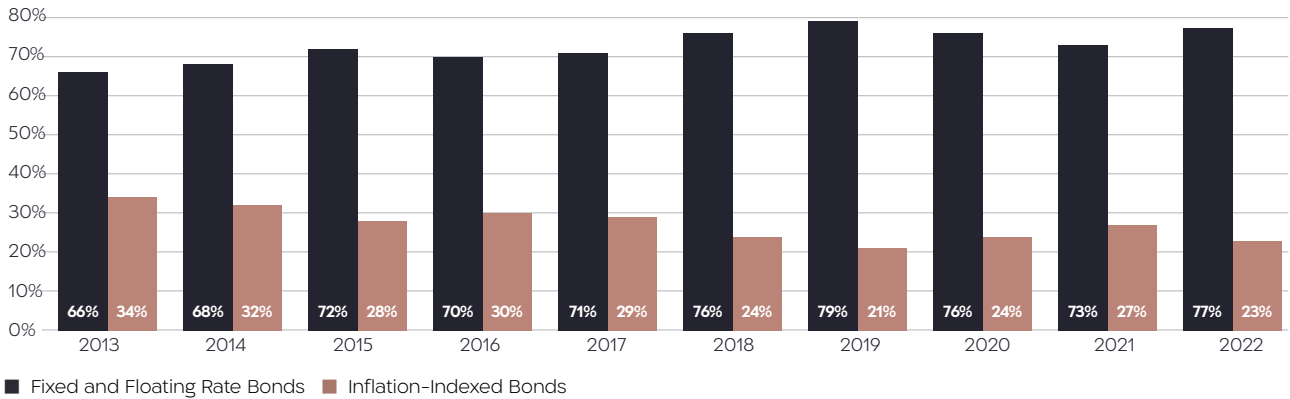


Across 2022, funding was primarily executed via regular auctions in addition to switch auctions, which were executed at the beginning of the year.

In 2022, the majority of the issuances were executed to expand the existing series ("tapping"). In addition, in February 2022, a new 30-year series was opened.

The following graph shows the funding distribution in the fixed and indexed channels (the fixed-rate channel includes floating-rate). This distribution, illustrated in the graph, shows that the fixed-rate channel constituted the bulk of the funding throughout the years, following the strategic policy.

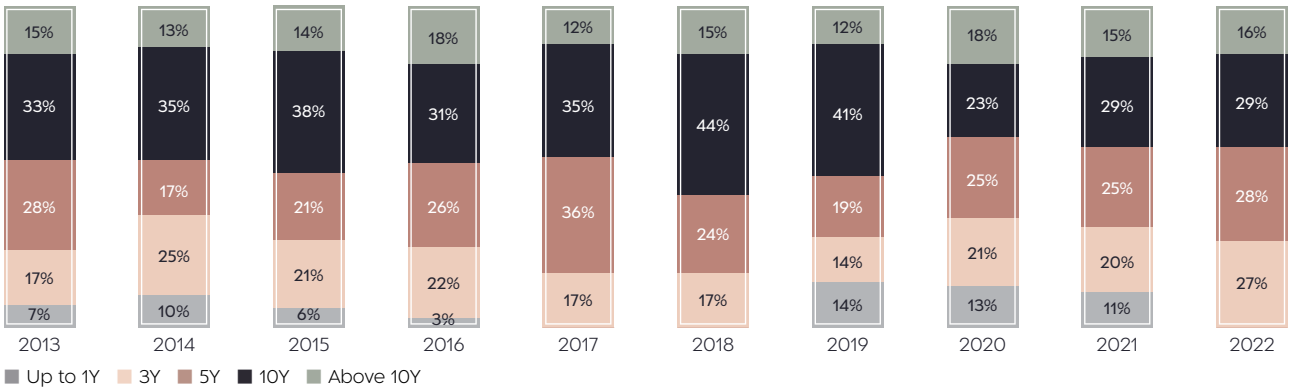
Distribution of Funding by Channel, 2013-2022 (%)



### Tradable Funding in the Domestic Market

The tradable funding in the domestic market is executed by issuing short-term bonds and benchmark bonds for terms of 3, 5, 10, and 30 years. In 2022, no short-term bond issuances were executed due to the decline in financing needs.

Distribution of funding by term-to-maturity (%)



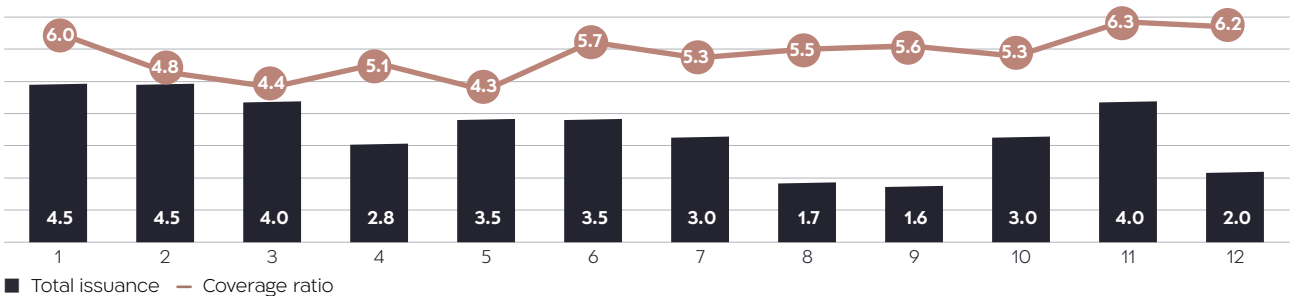
### Coverage Ratio

This ratio is calculated by dividing the requested quantity of the bond (demand) by the issued quantity of the same bond (supply), and reflects market demand.

The following graph examines the coverage ratio (monthly average) relative to the issued quantity in the same month.

The average coverage ratio for 2022 was roughly 5.3 compared to an average coverage ratio of 4.6 in 2021.

Coverage Ratio and Issued Amount, 2022 (Months)

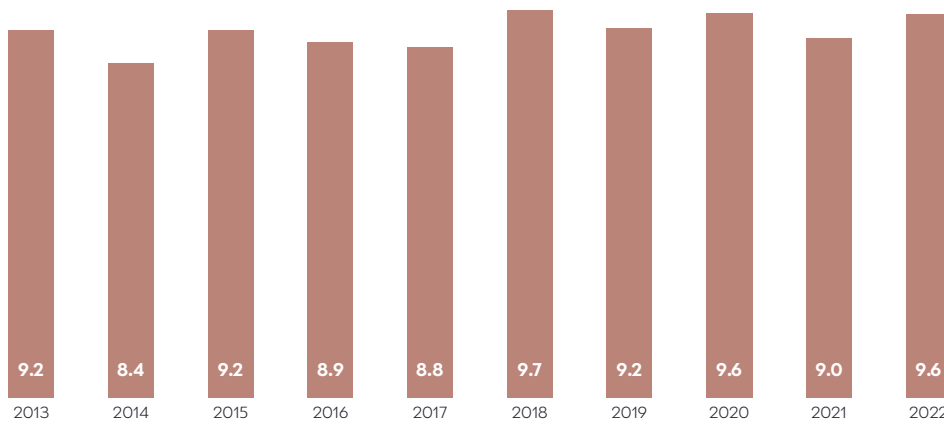


### Main factors influencing the coverage ratios:

-   
 Domestic and global market conditions
-   
 Seasonality
-   
 Funding volume and mix
-   
 Public pension portfolio mix

The following graph illustrates the average term-to-maturity of the funding. As in previous years, the average term-to-maturity remained high and stood at a level of roughly 9.6 years.

Average term-to-maturity (Years)



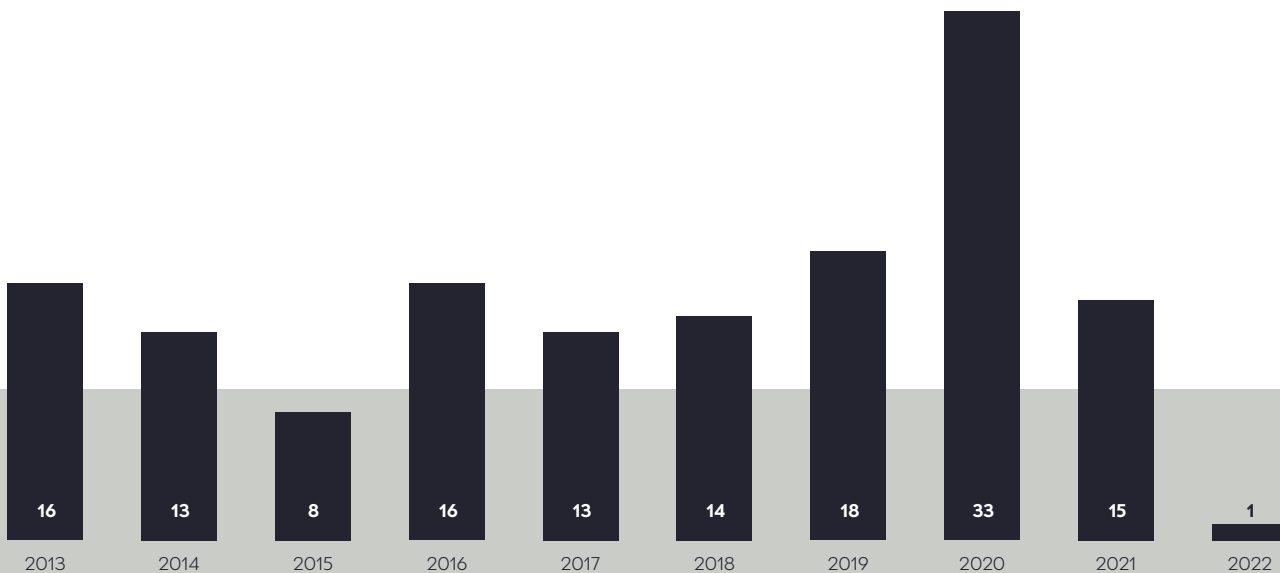
## Switch Auctions

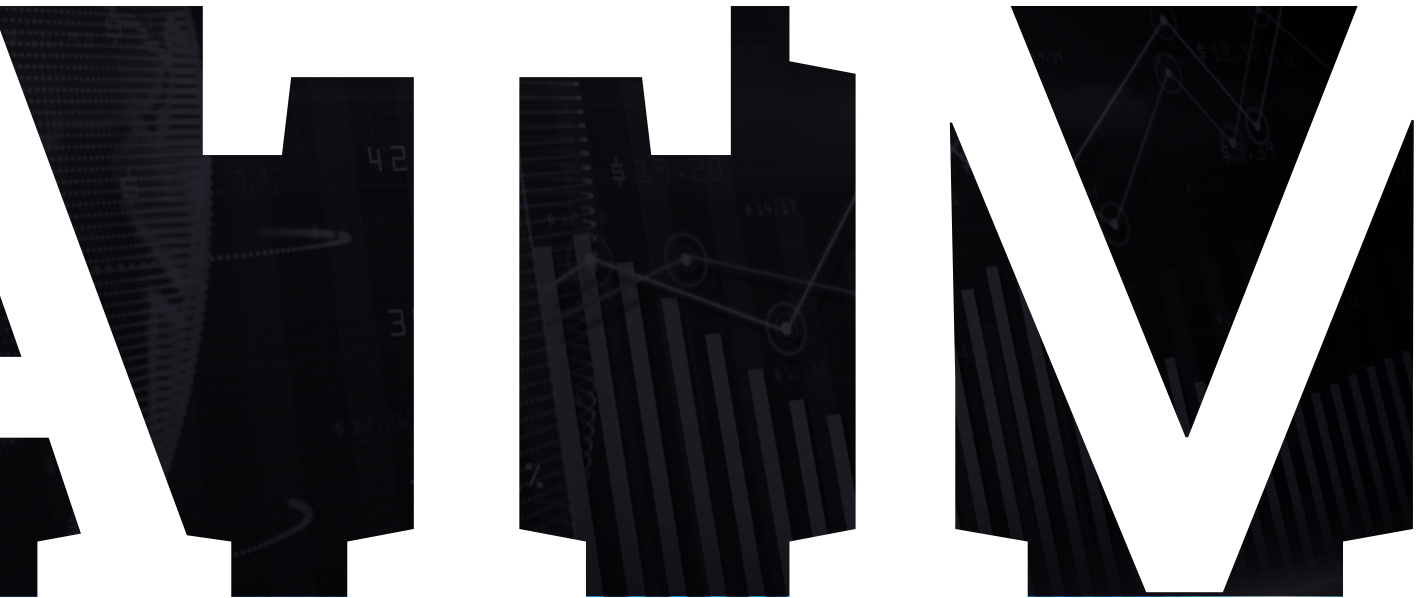
At the end of 2007, the Government Debt Management Unit began utilizing switch auctions, in which bonds with short-term maturities (less than one year) are replaced with new bonds with longer-term maturities. Switch auctions help to smooth out the government's financing needs, allow more efficient management of its cash flow, and assist in replacing existing series with new benchmark on-the-run series. Switch auctions also help to reduce refinancing risk and extend the average term-to-maturity. In addition, the use of switch auctions increases debt management flexibility and assists in making rapid tactical adjustments in the fundraising policy in response to changes in the capital markets and financing needs.

**In 2022, due to low financing needs, there was a sharp decline in the volume of funding for switch auctions, amounting to roughly NIS 1 billion, compared to approximately NIS 15 billion in 2021.**

The following graph illustrates the volume of switch auctions over the past decade.

Switch Auctions (NIS Billions)





### Buyback Auctions

Since October 2008, the Government Debt Management Unit has conducted buyback auctions, in which tradable bonds are purchased to perform early redemptions and reduce the government debt. Unlike switch auctions, in which the purchased bonds are replaced with other bonds.

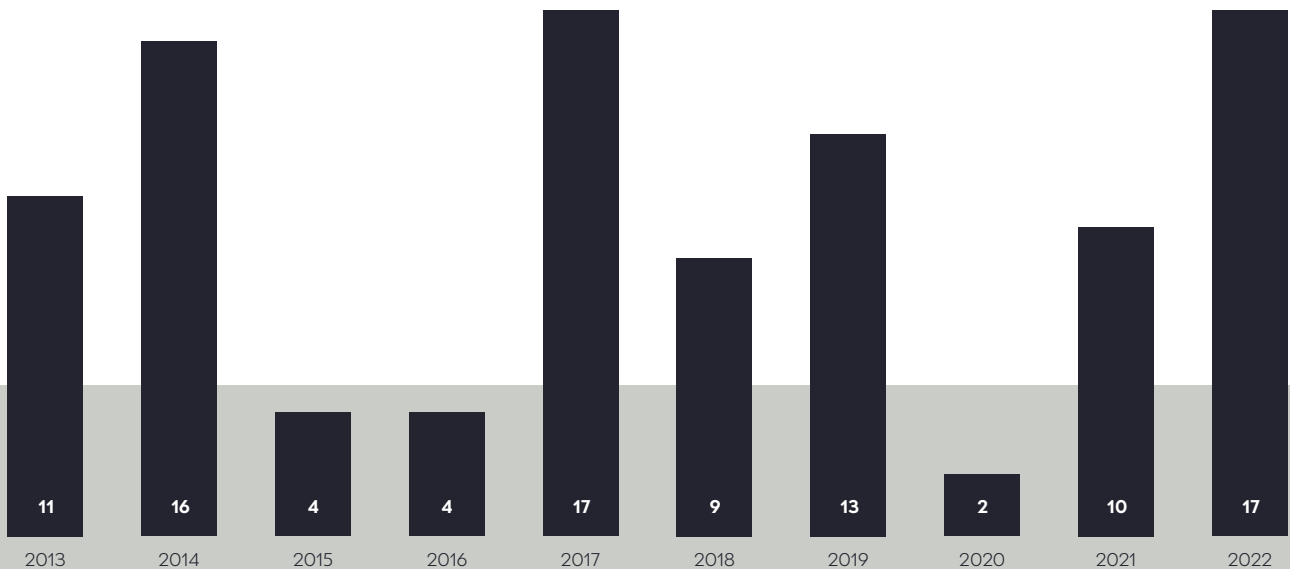
Main objectives of buyback auctions:

- Efficient management of the government's cash flow
- Reducing refinancing risk
- Interest expense savings

The following graph illustrates the buyback auctions executed over the past decade.

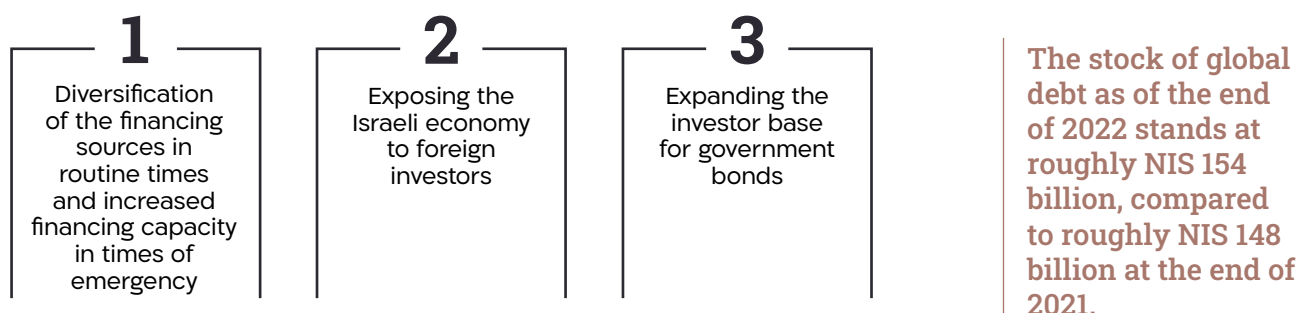
In 2022, there was an increase in the volume of early purchases (buybacks), in light of a decline in the financing needs, amounting to roughly NIS 17 billion, compared to approximately NIS 10 billion in 2021.

Buyback Auctions (NIS Billions)



# GLOBAL DEBT

Foreign currency debt issuances in international markets serve several strategic goals:



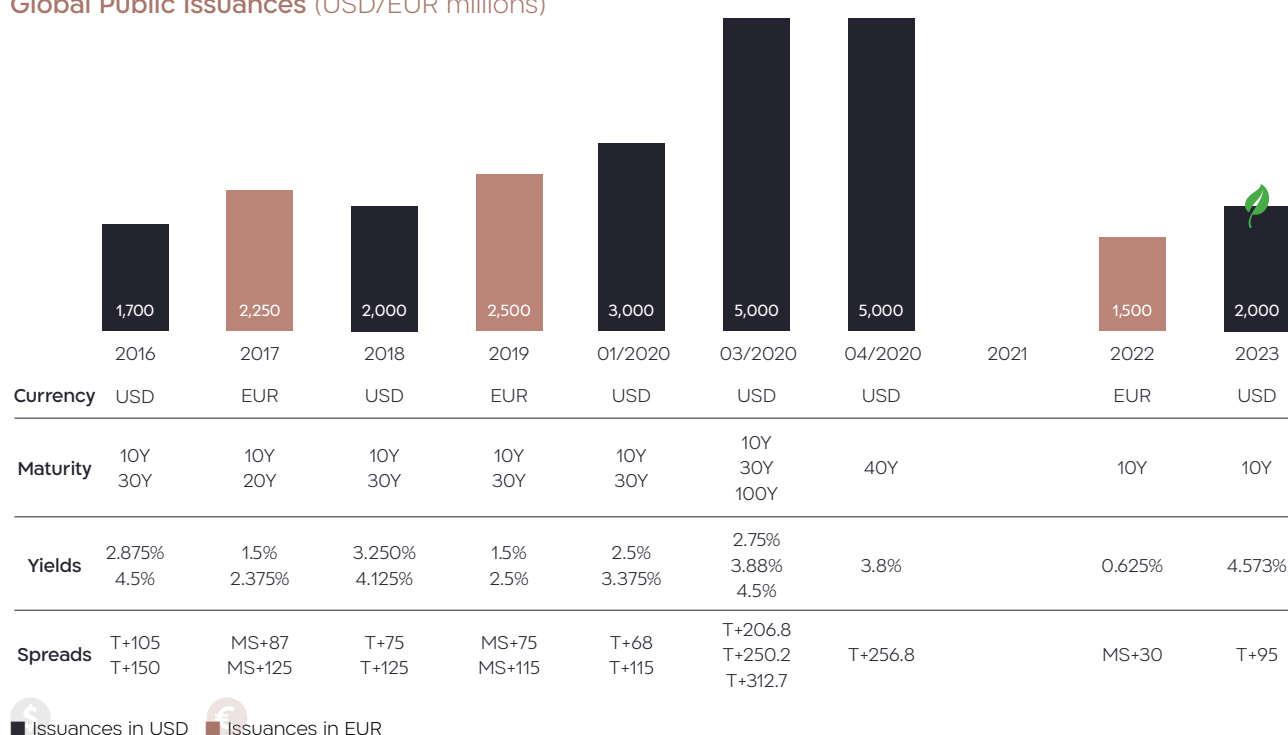
Despite negative net issuance in global debt in 2022, the debt stock increased slightly, mainly due to changes in the exchange rate. The stock is composed of sovereign bonds, private placements, debt raised through the Bonds organization, outstanding bonds guaranteed by the U.S. government, and additional loans.

## Sovereign Issuances

Between the years 1995-2023, the State of Israel issued 25 sovereign bonds in the global debt capital markets, among them the United States, Europe, Taiwan, and Japan. Over the past decade, there was an upward trend in the size of the issued series, due to both the policy of issuing benchmark series as well as high global demand for Israel's sovereign bonds abroad.

The stock of public bonds in foreign currency, as of the end of 2022, stands at roughly NIS 112.5 billion, compared to roughly NIS 108.5 billion at the end of 2021.

Global Public Issuances (USD/EUR millions)





## Issuance in Global Markets - January 2022

In January 2022, Israel returned to the global markets and to the Euro market in particular, which it had not issued since 2019, and executed a 10-year EUR 1.5 billion bond, with a yield of 0.69%, carrying a spread of 30 basis points above the benchmark (Euro Mid-Swap Annual 10 Years).

This issuance, carried out under the state's EMTN shelf programme, marked the lowest funding cost for a foreign currency public issuance for the State of Israel. The previous Euro-denominated 10-year offering, issued in 2019, carried a yield of 1.574%. The successful issuance reflects the relative strength of the State of Israel's economic parameters compared to countries around the world.



## First Green Issuance - January 2023

The State of Israel attaches great importance to promoting the steps and resources invested in aspects of sustainability, environment and climate, both as part of the activities of the public sector and government ministries and by the private and business sectors. In recent years, these have been advanced by the publication of national strategic plans, goals setting, promotion of government decisions, and legislation.

In January 2023, Israel returned to the USD market, after approximately 3 years, and for the first time executed a green issuance of a 10-year USD 2 billion bond with a yield of 4.573%, carrying a spread of 95 basis points above the benchmark U.S. Treasury rate. The previous USD-denominated issuance was executed in 2020 during the COVID-19 pandemic when the spread stood at more than 200 basis points for a similar term.

The State of Israel was required to publish a green bond framework detailing its policies and goals to issue a green bond. Additionally, it needed to include its expected use of proceeds for financing green projects that promote those goals, and their environmental advantages, and to provide supplemental information concerning the management of environmental risks associated with the stated projects.

To comply with these principles, CICERO Shades of Green was chosen to provide a second-party opinion on the framework, ultimately assigning it its highest green score.

To formulate the framework and gather the necessary data for the issuance, an interministerial subcommittee was established by the Accountant General, consisting of representatives from Ministry of Finance, Ministry of Economy and Industry, Ministry of Transport, Ministry of Energy, Ministry for Environmental Protection, the Water Authority, and the Israel Innovation Authority.

This issuance, which was executed under the State of Israel's prospectus in the United States (SEC), recorded a high demand of approximately USD 12 billion, from a wide variety of high-quality investors.

→ Further information regarding the Green Issuance can be found in chapter on page 30.

## Private Placements

An additional funding option available to the Government Debt Management Unit is the execution of private placements to strategic investors. These issuances may be executed under reverse inquiries from investors and the decision on their execution is made after an in-depth examination of funding needs, market conditions, and the quality of the investors. Most private placements are executed by tapping existing series of bonds already issued in the global markets.

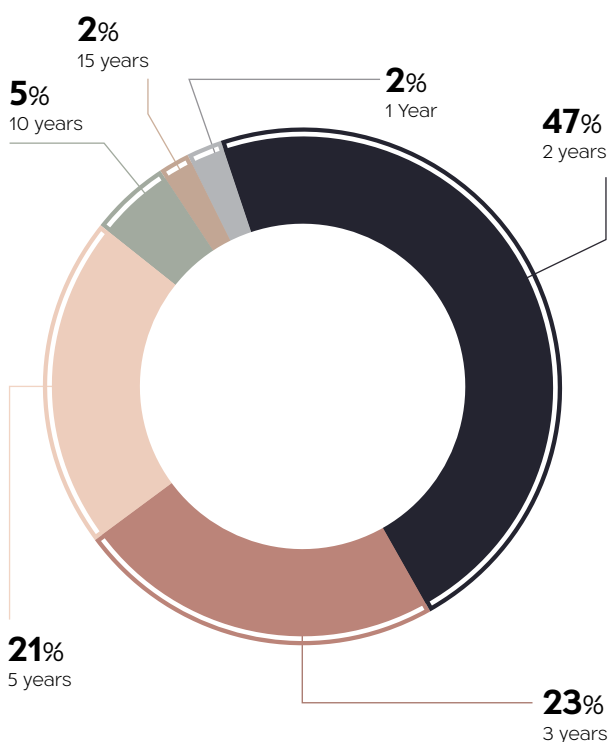
No private placements were executed in 2022.

## Issuances through the Bonds Organization

The Bonds organization (State of Israel Bonds), established in the 1950s, serves as a platform for raising non-tradable debt in foreign currency and in doing so assists with the funding needs of the State of Israel, as well as assisting in maintaining the connection between the state and the Jewish diaspora. Over the years, the Israel Bonds organization has shown a counter-cyclical nature: in years of recession or geopolitical shock, the amount of debt raised by the organization increases. The organization's primary goal is to expand the investor base and diversify the funding sources of the State of Israel, mainly through retail customers, but also through institutions.

In 2022, the organization raised roughly USD 1.3 billion. The stock of debt raised through the Bonds organization, as of the end of 2022, stands at roughly NIS 18.5 billion, compared to roughly NIS 16.7 billion at the end of 2021.

Bonds Organization Funding by Time to Maturity - 2022 (%)



## Issuances Guaranteed by the U.S. Government

In April 2023, the U.S. Congress approved a three-year program to provide up to USD 9 billion par value guarantees for debt issuance by the Israeli government. The United States provides a full guarantee for the principal and interest payments of bonds issued by Israel under this program, therefore these bonds benefit from a credit rating comparable to the credit rating of the United States and the yield at which they are sold is only slightly higher than the yield on U.S. government bonds. The program has been extended several times by the U.S. government, most recently in December 2022, until 2028.

Under the guarantee program, in the years 2003-2004 (years during which there were major deficits in the state budget), the State of Israel issued bonds with a par value of USD 4.1 billion. The Israeli government has not utilized the guarantee program since November 2004. As of the end of 2022, the balance available for use under the program totals USD 3.8 billion.

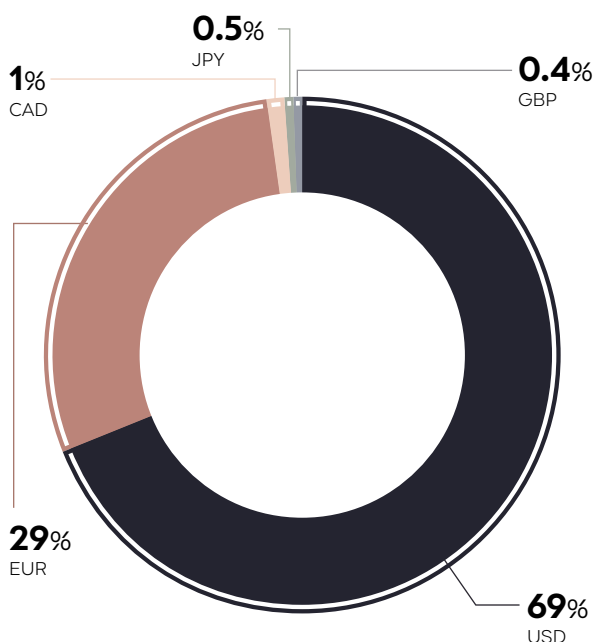
At the end of 2022, the Government Debt Management Unit executed a buyback program for a portion of the U.S. guaranteed bonds and delisted them. This program was implemented, against the backdrop of the budget surplus and the decline in the government deficit, using a long-term strategic perspective, which made it possible to reduce the stock of government debt and the future interest expenses of the government.

The U.S. guarantee program supports the fundraising capabilities of the State of Israel in international markets in times of emergency. To date, there is no intention to utilize the program except in the case of an essential financing need. The stock of bonds guaranteed by the U.S. government, as of the end of 2022, stands at roughly NIS 21.5 billion, compared to roughly NIS 21.4 billion at the end of 2021. The increase in the debt stock stems from changes in the exchange rate, despite the reduction in the USD denomination value of the stock.

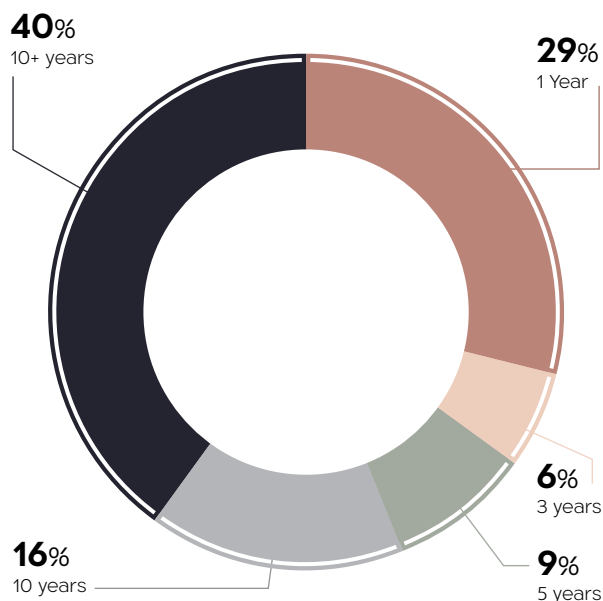
## Loans From Foreign Governments and Other Loans

In addition, there is an additional balance of non-tradable foreign currency debt consisting of bonds to foreign governments, international institutions, foreign banks, and bi-national funds. At the end of 2022, this balance amounted to roughly NIS 1.4 billion, similar to the end of 2021 and it constitutes about 1% of the total foreign currency debt.

Global Debt Stock by Currency (%)



Global Debt Stock by Term to Maturity - Principal Only (%)



### Credit Rating of the State of Israel

	Moody's	S&P	Fitch
Rating	A1	AA-	A+
Outlook	Stable	Stable	Stable

The credit rating of the State of Israel remained unchanged in 2022. In April 2022, Moody's affirmed Israel's A1 credit rating and changed its outlook to "positive" from "stable". In April 2023, Moody's once again affirmed Israel's rating at A1, and updated their outlook to "stable" from "positive". In March 2023, Fitch affirmed Israel's A+ credit rating with a "stable" outlook. In May 2023, S&P affirmed Israel's AA- credit rating with a "stable" outlook.

### The State of Israel in the Eyes of the Rating Agencies

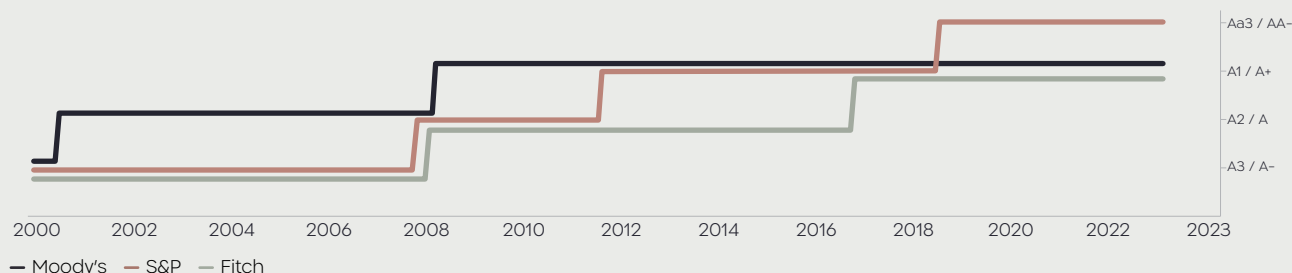
#### Strengths

- GDP per capita and human development indicators are above peer country medians
- Consistently strong and stable economic growth
- Prosperous and diversified economy backed by well-developed institutions and supportive economic policies
- Excellent access to both domestic and international capital markets

#### Challenges

- Political instability that leads to difficulty in implementing fiscal convergence measures
- High geopolitical risks and recurrent conflicts in the region
- Limitation on the long-term growth potential due to the burden on productivity and low labor force participation by certain populations

Evolution of the Credit Rating of the State of Israel



# GREEN BOND

## Background

Climate change is a global risk and refers to average long-term temperature changes across the planet. Negative external effects caused by a changing climate can already be seen affecting many countries' GDPs, budget expenditures, and revenues, among other macroeconomic indicators.

Likewise, addressing climate change is a global responsibility. To mitigate, or when necessary adapt to climate change, countries have promoted sustainable and environmental policies. These policies are typically based on two overarching objectives: reducing the emission of greenhouse gases into the atmosphere and preparing for the effects of increased global temperatures. Israel ratified these objectives at the United Nations Framework Convention on Climate Change (UNFCCC).<sup>1</sup>

Sustainability and transitioning to a net-zero carbon economy are important goals for Israel, and the State's plan to achieve them is set out in its National Action Plan on Climate Change. To support the national policy objectives on sustainability, the Government is financing "green" projects, which aim to either mitigate or adapt to a changing climate. One of the financing tools used is green bonds, in which proceeds from these specially denoted funding instruments are solely allocated to green projects.

Within its Financing Department, Israel's Accountant General established an overarching climate policy and various activities intended to help the department reach its goals. One of the activities was drafting and publishing a Green Bond Framework and, following this, issuing its first green bond.

Israel's Accountant General's Office, through its Financing Division, has taken the step of drafting and publishing a Green Bond Framework and, following this, issued its first green bond. In addition to direct financing for green projects and diversifying Israel's global investor base, the inaugural Green Bond Framework, and green bond issuance, showcase how the Ministry of Finance can utilize its financing expertise to contribute to the Government's holistic sustainability strategy.

## Green Bond Framework

In November 2022, the Accountant General's Office published the Government's inaugural Green Bond Framework. The Framework was developed to instruct how the Government intends to utilize proceeds raised from bonds denoted as "green", otherwise known as "Green Bonds". An inter-ministerial Sustainable Finance Working Group, chaired by the Ministry of Finance's Accountant General, will review projects and allocate the green bond funds according to the Framework.

---

<sup>1</sup><https://www.mevaker.gov.il/sites/DigitalLibrary/Pages/Publications/855.aspx>

Cicero Shades of Green, an expert in the field and second-party opinion provider analyzed Israel's framework and assigned it their highest rating ("Dark Green"), reflecting the framework's quality and that it meets international standards.

The Framework was drafted with two international standards in mind: (1) The 2021 version of the Green Bond Principles administered by the International Capital Market Association. As such, it is structured with four pillars of transparency: use of proceeds; process for project evaluation and selection; management of proceeds; and reporting (2) The EU Taxonomy. While the EU Taxonomy does not apply to Israel, Israel recognizes its importance and the Framework considers the Substantial Contribution Criteria of the EU Taxonomy, as well as the draft Israeli Taxonomy, to the extent possible.

The Framework also sets up the standards to communicate with investors and other market participants on the commitments Israel has made to sustainability.

The Framework may be updated from time to time to ensure continued alignment with voluntary market practices and regulations. Any updated version of the Framework will either maintain or improve the current levels of transparency, reporting, and disclosures, and will be subject to the same external review standards.

## Green Bond

Following the publication of the Green Bond Framework and a global investor roadshow, on January 10, 2023, the Accountant General successfully executed the government's inaugural green bond issuance.

The bond raised USD 2 billion, for a term of ten years, with a 4.5 percent coupon, at a spread of 95 basis points above the benchmark U.S. Government bond yield. The issuance drew more than USD 12 billion of demand (six times oversubscribed) from more than 300 investors across 40 countries, including the UAE, Japan, and Korea. Barclays, BofA Securities, BNP Paribas, and Citi underwrote the deal.<sup>2</sup> The successful green bond issuance places Israel among a selective group of countries, including Ireland and Denmark.

Continued reporting on the selected green projects, financed in part by the green bond, and their impact on the environment, further highlights Israel's path toward its sustainability goals.



<sup>2</sup>More information on Israel's Green Bond Framework may be found on the Ministry of Finance website: <https://www.gov.il/en/Departments/publications/reports/green-bond-framework>





# **SECONDARY MARKET**

The year 2022 was a turning point in terms of the economy. Following 2021, which reflected a recovery from the COVID-19 pandemic along with strong growth and tax revenue, 2022 pivoted to an increase in demand, an expansionary monetary policy, disruptions in the supply chains, and marked the start of Russia's war in Ukraine. All these together, with an emphasis on the war between Ukraine and Russia, led to an increase in energy and commodities prices worldwide and accelerated the inflation rate. In response, central banks around the world started a process of monetary contraction in terms of raising their respective key interest rates. 2022 was characterized by a high inflation rate that remained above the inflation targets in various countries. In some countries, such as the United States and the countries of the Euro Area, the raising of interest rates appears to be slowing the rise of inflation rates. That trend, however, did not yet begin in Israel. The interest rate increases, and the Covid-19 quarantine periods, which are still ongoing in China, led to a measured slowdown in global economic activity and contributed to an increase in the yield of government bonds worldwide. This is alongside decreases in the main global capital markets.

The yields of government bonds increased worldwide during 2022 as inflation led to contractionary monetary steps that included interest rate increases by many central banks. The yield of 10-year United States government bonds increased from 1.5% at the end of 2021, to 3.87% at the end of 2022. The yield of 10-year German government bonds, which traded at a negative level between 2019 and 2021, were traded at the end of 2022 at a level of 2.565%, as compared to -0.18% in 2021.

The yield of Israeli government bonds, in shekels, for 10 years was 3.59% at the end of 2022, as compared to 1.02% at the end of 2021, similar to the worldwide trend. The yield of index-linked bonds for 10 years increased to a level of 0.84%, as compared to -1.29% at the end of 2022.

**As of December 2022, there were 12 primary dealers in government bonds, seven of which are international banks**

## Market making in government bonds

Market Making reform came into effect in 2006 with several objectives: developing an efficient and competitive government bonds market; introduction of international investors; increase of demand for government bonds, and reduction of financing costs.

Primary dealers are required to comply with primary market and secondary market obligations. When in compliance with these requirements, primary dealers are entitled to benefits, such as exclusive issuance auctions for primary dealers, participating in noncompetitive auctions ("green-shoe"), receiving access to the government bonds lending facility, and eligibility to participate as counterparties in hedging transactions.



### Primary Market Ranking



Primary market ranking is based on the volume of purchases in government bond auctions during the year.



### Secondary Market Ranking

Secondary market ranking is based on trading and quoting activity on MTS (the exclusive trading platform for Primary Dealers in government bonds), in each asset class (Nominal and CPI-linked bonds). Secondary market rankings are calculated weekly, monthly, quarterly, and annually. The Green-shoe allocations for the Primary Dealers are determined based on weekly rankings.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12

 Yearly Primary Market Ranking	 Yeraly Secondary Market Ranking - Nominal	 Yeraly Secondary Market Ranking - CPI-linked
Leumi	Leumi	Hapoalim
Hapoalim	Hapoalim	Leumi
Discount	Discount	Discount
Goldman Sachs	Mizrahi Tefahot	Mizrahi Tefahot
Barclays	Citibank	Citibank
Mizrahi tefahot	Barclays	Goldman Sachs
Deutsche Bank	Goldman Sachs	Barclays
Merrill Lynch	JP Morgan	JP Morgan
JP Morgan	Deutsche Bank	Deutsche Bank
Citibank	Fibi	Fibi
BNP Paribas	BNP Paribas	BNP Paribas
Fibi	Merrill Lynch	Merrill Lynch

\*NIS 1 of T-Bill is calculated as NIS 0.50.

## Trading Volumes in Government Bonds

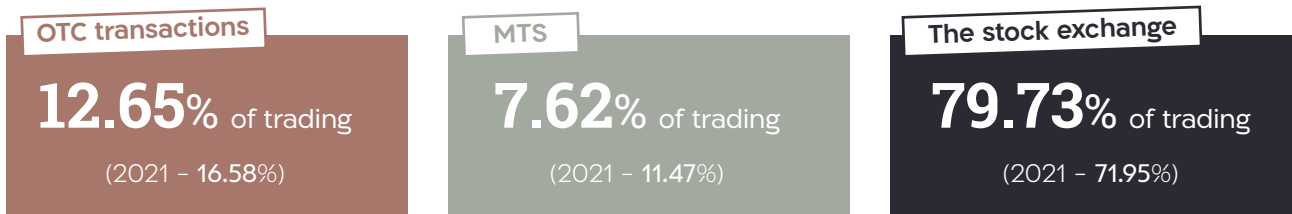
Trading in government bonds takes place on several venues: The Tel Aviv Stock Exchange (TASE), MTS (exclusive for Primary Dealers in Israeli government bonds), as well as over-the-counter (OTC).

Government bonds in 2021 were characterized by strong trading volumes in the secondary market, especially on TASE, similar to 2020. Trading volumes were influenced by the Bank of Israel's quantitative easing programs, as well as decreased issuances in the domestic market that was due to decreasing funding needs.

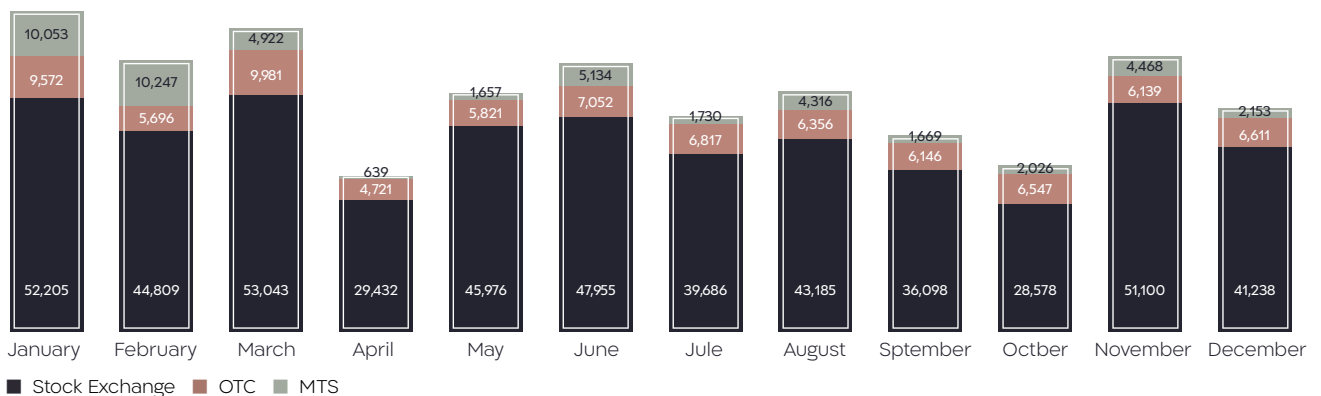
Daily average trading volume in government bonds on the TASE in 2022 stood at approximately NIS 2.1 billion as compared to about NIS 2.5 billion on average in 2021. Total trading volumes of government bonds in 2022 reached a daily average of approximately NIS 513 billion in 2022, as compared to roughly NIS 602 last year. On the MTS, the trading volume decreased considerably from a level of about NIS 96 billion to approximately NIS 49 billion, whereas the trading on the OTC (over-the-counter transactions) was roughly NIS 81 billion, as compared to about NIS 139 billion last year.

**Total trading volumes of government bonds in 2022 reached a daily average of approximately NIS 2.7 billion on a daily average as compared to NIS 3.53 billion in 2021 (the average is calculated according to the number of trading days on the stock exchange. The trading on the MTS is conducted Mondays through Fridays.)**

### Distribution of trading volumes between the trading venues in:



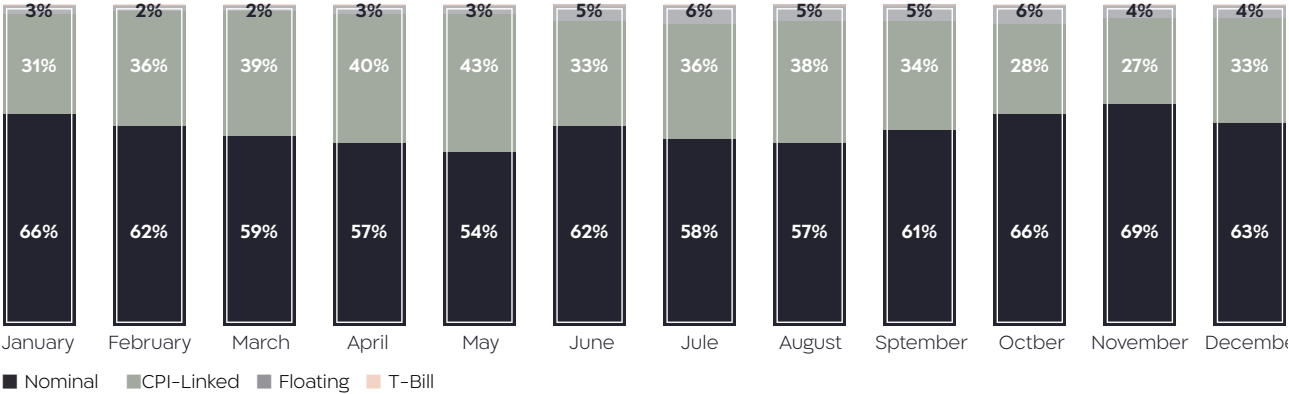
### Trading Volumes of Government Bonds in 2022 (millions, NIS)



## The Trading Distribution by Channels

Similar to previous years, the trading in government debt in 2022 focused on the fixed shekel channel (non inflation-linked). The ratio between the various channels in all the trading arenas: **the fixed-rate NIS channel: 61.34% of trading (2021 - 60.54%); the index-linked channel: 34.78% (2021 - 34.3%); the variable interest channel: about 3.86%, the short-term bonds channel: about 0.03%.**

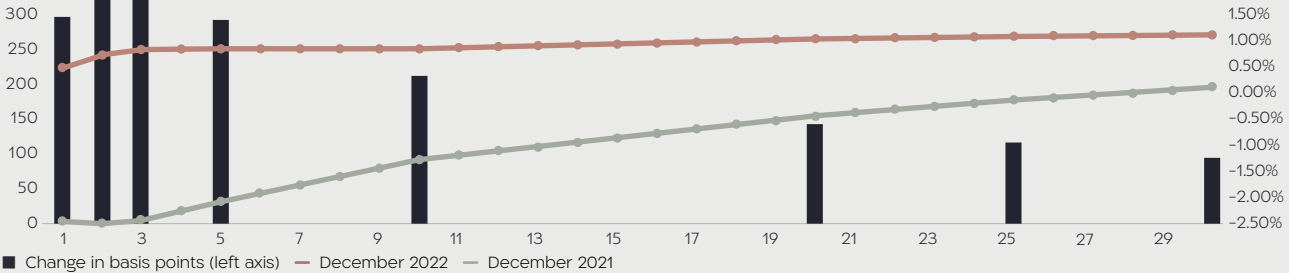
Breakdown of Trading Turnover in Different Segments in 2022



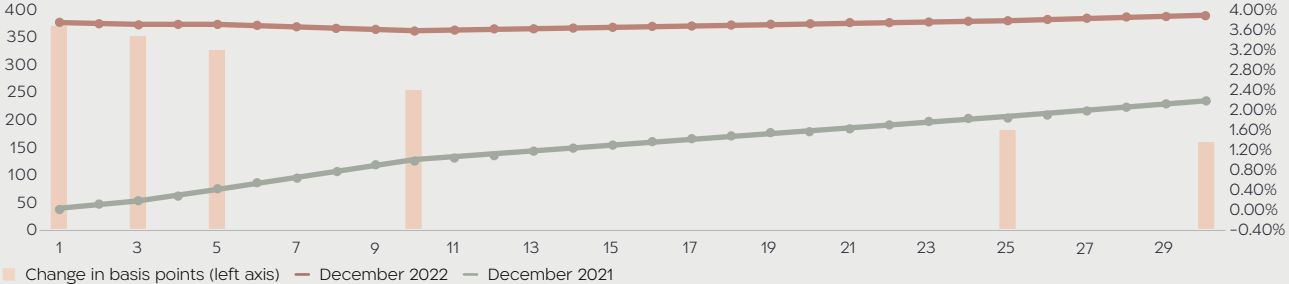
Yield curves

CPI-linked and nominal fixed-coupon yield curves at the end of 2022 and spreads from the 2021 yields:

The index-linked yield curve



The Fixed yield curve



Bond Lending Facility

The bond lending facility began operating in September 2006 as part of the Primary Dealership reform.

The accountant General, along with the Tel-Aviv Stock Exchange Clearing House, established a bond lending facility allowing Primary Dealers to borrow government bonds.

During 2022, the pool was in a range between NIS 2.3 and 9.1 billion (the market value of the bonds being borrowed.)

The lending balance (NIS, billions)



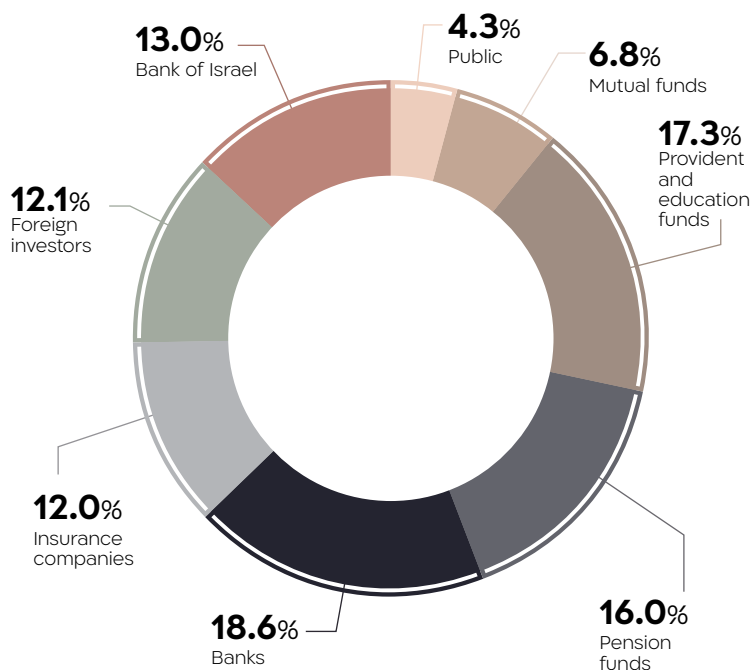
## Breakdown of Holdings in Tradable Government Bonds

- **Significant Changes:**The weight of pension and provident fund holdings was approximately 33.3% in 2022, compared to 35.8% at the end of 2021.

- The weight of foreign investors' holdings in government bonds increased to 12.1% in 2022 from 10.7% at the end of 2021.

- The Bank of Israel's share of holdings in domestic tradable government bonds increased significantly, to a level of 13% in 2022, as compared to 12.8% in 2021, and as compared to a holding rate lower than 1% in 2019.

## The distribution of holding in 2022



	Listed Capital (NIS billions)	Public	Mutual funds	Provident and education funds	Pension funds	Banks	Insurance companies	Foreign investors	Bank of Israel
2010	388.7	24.2	13.2	18.8	13.3	12.8	9.7	3.0	5.1
2011	408.8	22.3	8.5	19.3	14.9	14.1	9.8	6.3	4.8
2012	459.5	21.7	9.6	19.8	15.5	12.8	11.2	5.6	3.7
2013	480.7	19.9	11.8	20.3	15.9	13.0	12.3	3.7	3.1
2014	496.2	18.5	13.6	20.1	15.4	11.9	12.6	5.5	2.4
2015	502.7	17.1	13.5	20.0	14.9	14.0	13.0	5.5	2.0
2016	498.7	15.2	11.4	20.7	16.1	16.0	13.7	5.2	1.7
2017	491.9	14.9	10.5	22.1	17.1	12.6	15.9	5.6	1.3
2018	480.4	15.0	10.8	21.9	16.4	11.8	16.5	6.7	0.9
2019	532.8	14.9	10.4	22.3	17.8	12.2	16.6	5.5	0.4
2020	630.9	12.1	7.3	19.6	15.3	17.2	13.6	7.3	7.6
2021	664.3	6.3	8.3	20.3	15.4	13.3	12.9	10.7	12.8
2022	547.2	4.3	6.8	17.3	16.0	18.6	12.0	12.1	13.0

Source: The Bank of Israel, 2022, a distribution of tradable government bonds holding as of 23.2.2023)

### Benchmark

The following graph denotes yields of Israeli bonds, denominated in foreign currency, maturing in 5, 10, and 30 years. These yields form a benchmark curve illustrating the Israeli economy's risk in dollars and euros. This benchmark curve helps Israeli companies find efficient pricing when looking to issue debt abroad.

The yield of treasury bonds in USD



The yield of treasury bonds in Euro







# **DEBT PORTFOLIO**

## Government debt

The size of the government debt stock at the end of 2022 was roughly NIS 1,037 billion, compared to approximately NIS 1,044 billion in 2021. This is a decrease of about 0.7% in the debt stock, as compared to an increase of roughly 6.1% in 2021. The nominal decrease in the government debt arose from higher account balances as compared to 2021, in addition to a significant decrease in the financing needs as a result of significantly higher income from taxation as compared to the original forecast, which was offset in part by an increase in the debt stock as a result of an increase in the inflation rate.

As the chart below shows, in the last decade external debt, out of the total debt, is trending lower, while in recent years it stabilized at an average of approximately 14%. A 10-year, EUR 1.5 billion benchmark issuance took place in January 2022.

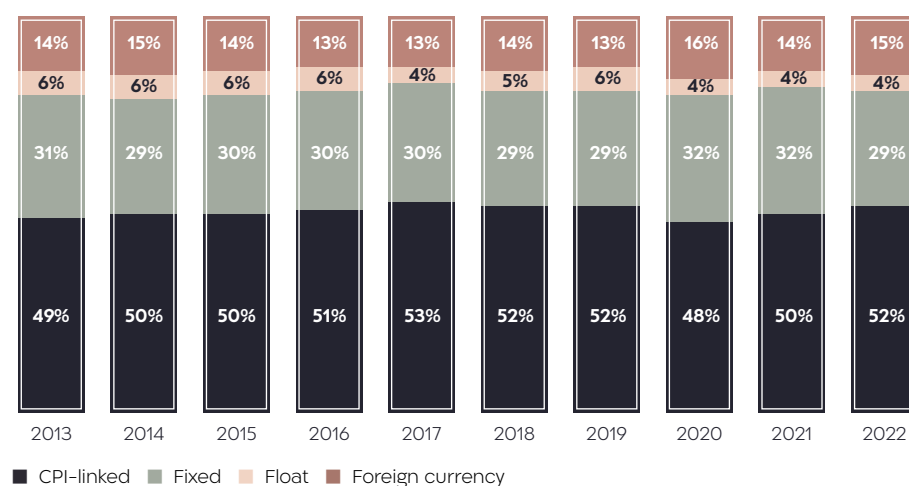
In 2022, the total amount raised in the non-tradeable channel was roughly NIS 12 billion, of which NIS 8 billion was raised from pension funds. The rate of non-tradeable financing of the entire debt financing carried out by the government in 2022 was about 19%, compared to roughly 25% in 2021.

In 2022, the rate of non-tradeable debt was about 32% of the total government debt, in light of the increase in the inflation rate and the interest rates offered by central banks during the year, as well as the sharp declines in the capital market. From October 2022, the issuance of "Arad" bonds to pension funds concluded, and, instead, a "yield assurance" mechanism began.

Alongside debt financing in the CPI-linked non-tradeable channel, the debt unit also raises CPI-linked tradeable debt in the domestic market. Raising CPI-linked debt and the increase in the inflation rate in 2022, contributed to an increase in the rate of CPI-linked debt from 50% in 2021 to 52% in 2022.

**In 2022, the scope of tradeable financing was roughly NIS 42 billion, which is about 66% of the total annual issuance, as compared to a scope of tradeable issuance of approximately NIS 119 billion in 2021, due to the sharp decrease in the financing needs. In 2022, tradeable debt comprised 53% of the total government debt.**

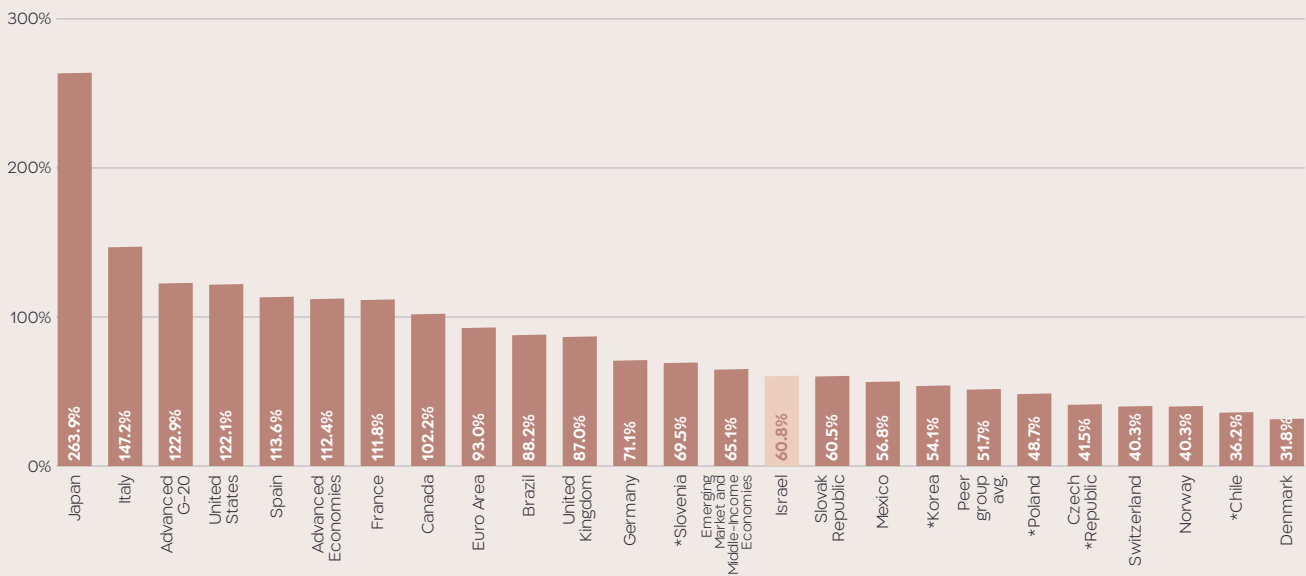
Government Debt Structure 2013-2022 (%)



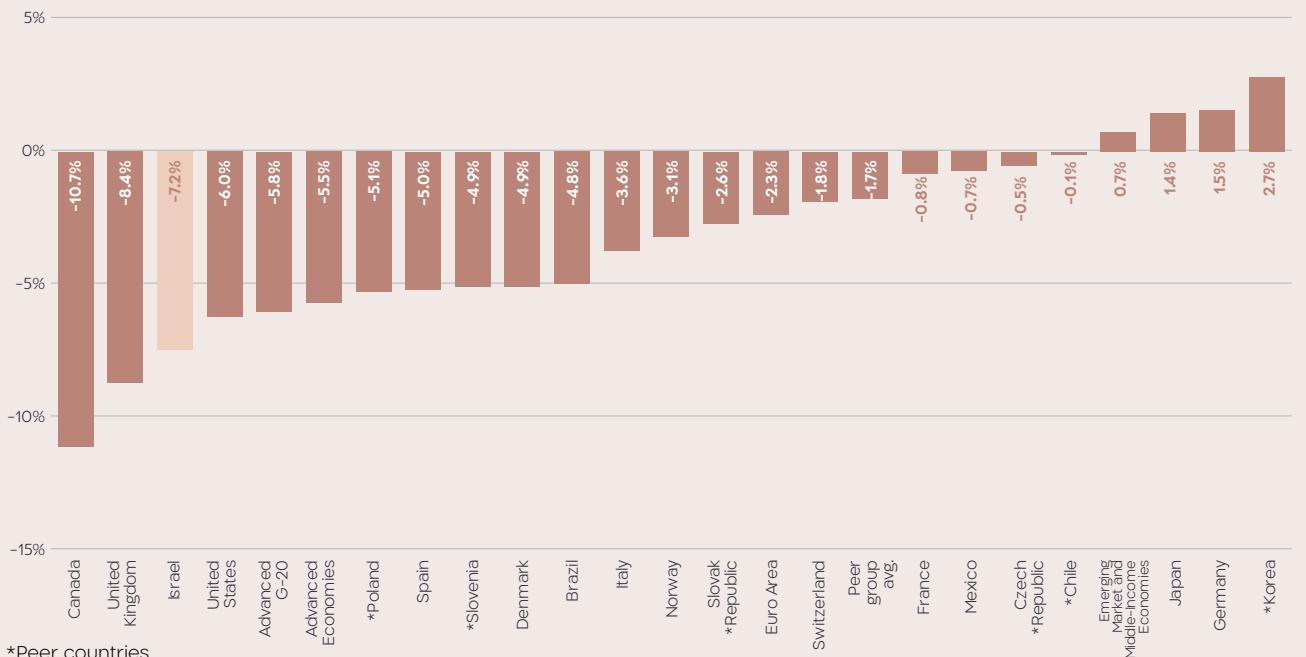
## The Debt-to-GDP Ratio

The debt-to-GDP ratio is a major marker for determining the state's credit rating and for financial stability. During the decade that preceded the Covid-19 pandemic, the debt-to-GDP ratio was characterized by a continued down-trend as a direct result of a responsible economic policy that reinforced the financial resilience of the state. In 2022, as a consequence of the income from taxes being significantly higher than the forecast, as well as a budgetary surplus, the public debt-to-GDP ratio, which includes the debt of local authorities, decreased by about 7.2% to 60.8%. The ratio of government debt to the GDP decreased by about 7.1% in 2022 to 59.1%.

### Public debt-to-GDP ratios in 2022



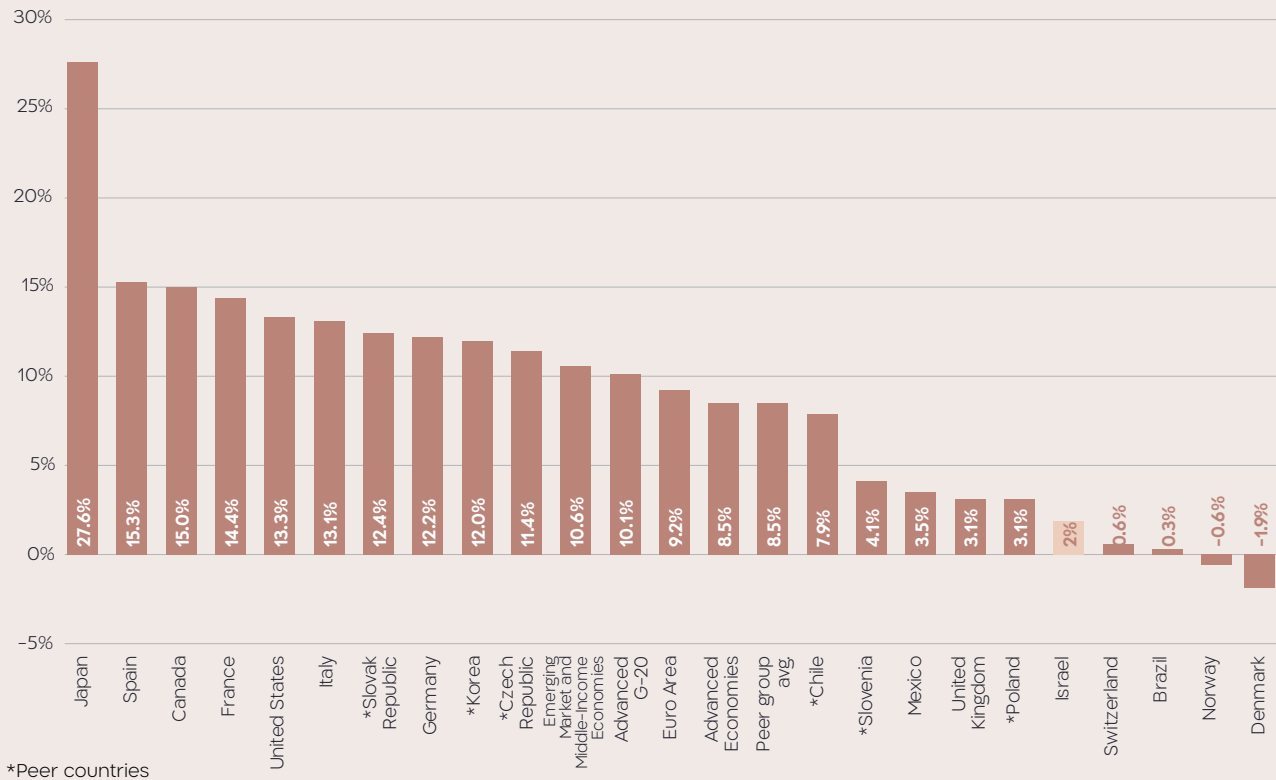
### Change in the public debt-to-GDP ratio between 2021 and 2022



\*Peer countries

Data Source: MOF and BOI other countries- Fiscal Monitor, October 2022

### Change in the public debt-to-GDP ratio between 2019 and 2022



Data Source: MOF and BOI other countries- Fiscal Monitor, October 2022



Israel's public debt-to-GDP ratio in 2022 is high compared to the average of the referenced countries. Nevertheless, the change in the debt-to-GDP ratio between 2019 and 2022, which embodies the impact of the Covid-19 pandemic, is low compared to the developed countries and the average of the reference countries - an increase of about 1.9%, compared to 8.5%.

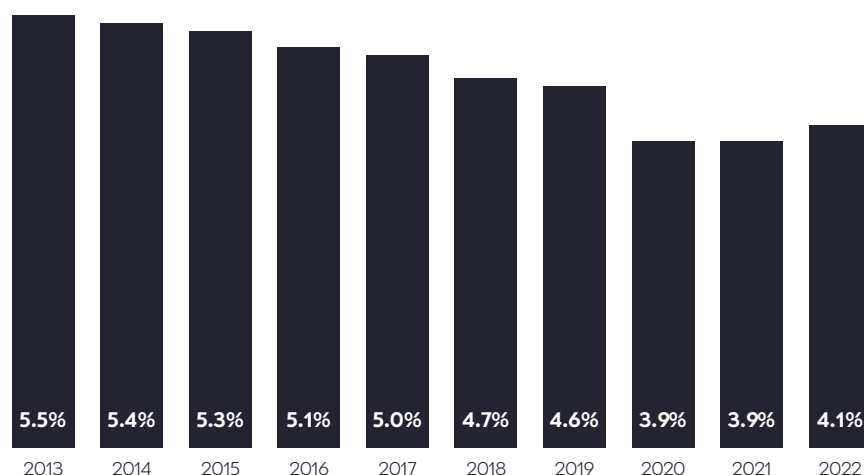
In addition, while the reference countries moderately decreased their debt-to-GDP ratios, the decrease was significant in Israel - 2022 recorded a sharp decrease of roughly 7.2%, as compared to an average decrease of 1.7% in the reference countries.

### Interest Expenditures

The scope of interest expenses in 2022 was roughly NIS 42 billion, compared to NIS 41 billion in 2021. The government's expenses (including Covid-19 expenses) in 2022 amounted to NIS 458.8 billion, compared to NIS 482.5 billion last year. The interest expense rate out of the total government expenses of the government in 2022 was 9.2%, as compared to 8.5% in 2021.

As can be seen in the chart below, the interest expense rate relative to government debt is trending downward over the past decade, decreasing from a rate of 5.6% in 2012, to 4.1% in 2022. The interest expense relative to debt increased in 2022 compared to 2021, as a result of, among other things, the increase in the inflation rate, which increased the interest expenses on non-tradeable debt. This is in contrast to a decrease in the interest expenses on the tradeable debt, which is characterized by raising funds at a lower interest rate compared to non-tradeable debt. In addition, the increase in the inflation rate was a contributing factor to the increase in interest expenses for National Insurance.

## The interest expenses relative to government debt in 2013-2022



As the chart shows, despite the downward trend in interest expenses relative to the debt stock, over the years the average bond duration of the debt stock was extended, and in 2022 it reached a peak level of 9.3. The decrease in interest expenses is a result of extending bond issuance duration while issuing at lower costs.

The chart below presents a comparison between the interest expenses in 2021 and 2022 for each channel, relative to the debt stock of that channel.

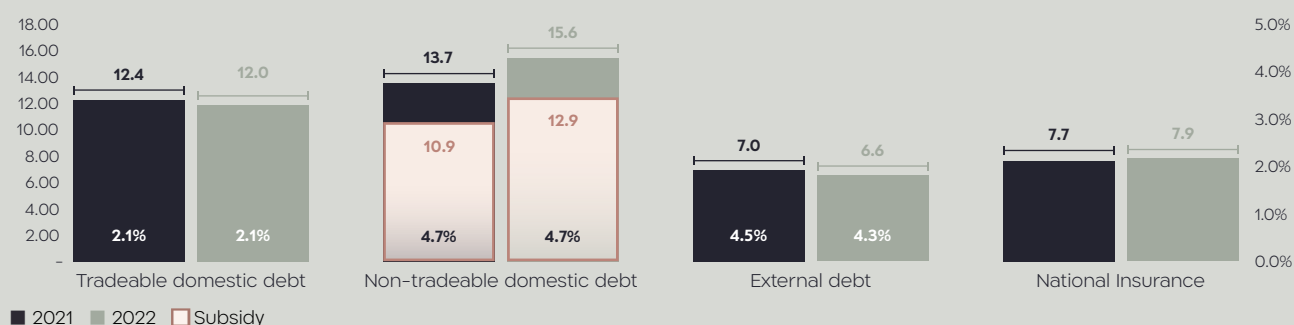
For the domestic tradeable channel, the interest expenses decreased by NIS 0.4 billion, from NIS 12.4 billion to NIS 12.0 billion. The interest expense rate in the tradeable channel out of the total tradeable debt stock remained unchanged at 2.1%.

For the non-tradeable channel, the interest expenses increased by NIS 1.9 billion from NIS 13.7 billion to NIS 15.6 billion. The interest expense rate in the non-tradeable channel out of the total non-tradeable debt stock increased by 0.1%, from 4.6% to 4.7%. An estimate of the subsidy provided to bonds designated to pension funds was NIS 10.8 billion in 2022, compared to NIS 8.9 billion in 2021. The estimate of the subsidy provided to insurance companies ("Hetz" bonds) was NIS 2.1 billion in 2022, compared to 2.0 in 2021. In total, the estimate of the subsidy provided to pension funds and insurance companies increased by about NIS 2.0 billion in 2022 compared to 2021.

For the external channel, the interest expenses decreased by NIS 0.4 billion, from NIS 7 billion to NIS 6.6 billion. The interest expense rate for the external channel out of the total external debt stock decreased by 0.2%, from 4.5% to 4.3%, as a consequence of the decrease in interest payments and despite the devaluationweakening of the Shekel, which increased the external debt.

For National Insurance, the interest expenses increased by roughly NIS 0.2 billion, from NIS 7.7 billion to NIS 7.9 billion.

## The interest expenses relative to the debt across the financing channels for 2021-2022



\*The debt to the National Insurance is not recognized as government debt because the state is not issuing a debt against it. Nevertheless, the National Insurance debt is manifested in the state budget and is subject to fiscal rules.

## Government Debt Risk Management

The main risks of the government debt portfolio are refinancing risk, liquidity risk, market risk, and credit risk. Risk management is carried out according to an orderly policy and as part of the long-term strategic goals of management of the governmental debt, treasury, and liquidity. The risk management strategy relies on models, scenarios, and simulations that help to minimize economic and budgetary risks while using designated systems to manage the government's debt risks.

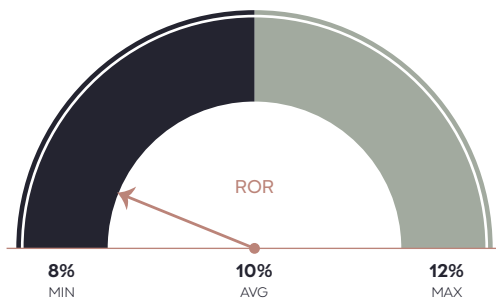
### Main financial risks:

1

**Refinancing Risk** - the risk that the state would be unable to fulfill its obligations to repay past debts or would have to refinance its debt at a higher cost. This risk is the main risk for the management of the government's debt portfolio. Consistent issuances across months and years create certainty for both decision-makers and active agents in the capital market and lead to high demand for issuances, which facilitates an economically efficient debt refinancing process and decreases the refinancing risk. In addition, the trend of extending the government's debt ATM aids in decreasing this risk.

The risk estimation is conducted with several indices:

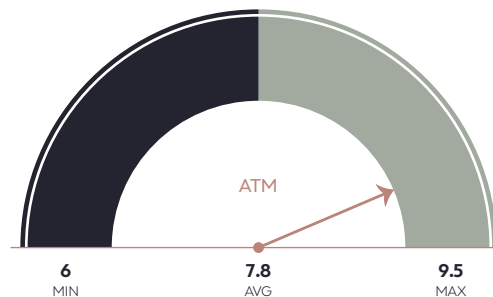
- An examination of the scope of short-term debt (debt redeemed in the upcoming year) relative to total debt (the Rollover Ratio). According to the risk management policy, this index should remain within the range of 8%-12%.



As of the end of 2022, this index is in line with the target and is close to the average rate of the last decade, which is roughly 8.2%, while in 2021 the index was 9.0%.

- The average time to maturity (ATM) - this index reflects the average remaining time to maturity of the debt portfolio by a weighted average of the principal redemption dates. Because this index is an average, the risk estimate is incomplete, and thus is used in combination with the ROR for forward-looking one-year

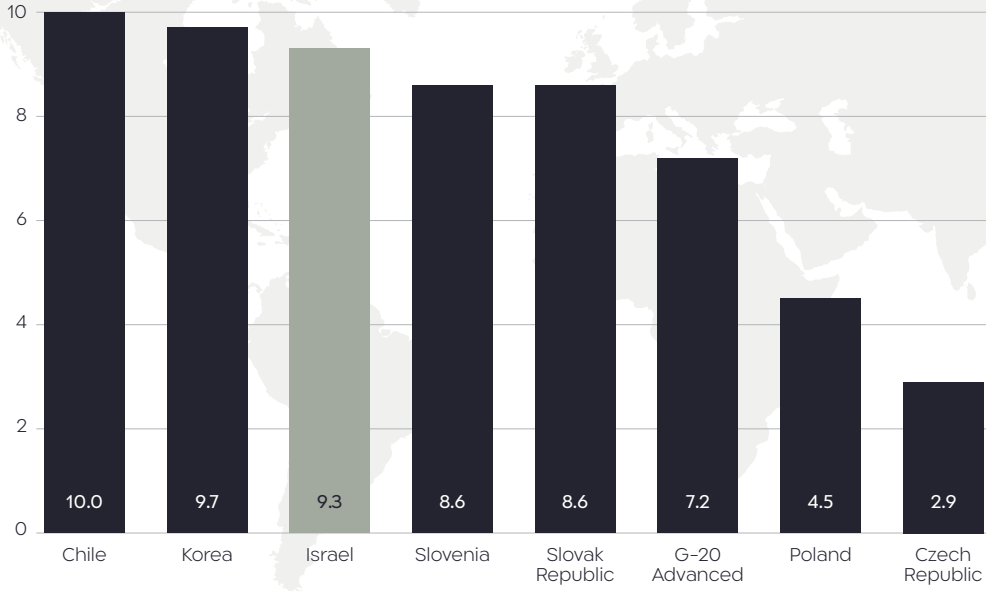
and three-year periods. An estimate of the refinancing risk is performed by combining those two indices. In addition, the refinancing risk is mitigated by maintaining a consistent issuance policy, in which fixed amounts are issued for fixed ranges of 3, 5, 10, and 30 years (benchmarks) aimed to smooth the redemption curve. As of the end of 2022, this index was 9.3, as compared to 9.1 in 2021. The ATM of the debt portfolio was significantly extended in recent years and is currently near its highest level in the last decade.



A comparative analysis was carried out intending to investigate global trends and identify countries with characteristics that are similar to those of the State of Israel to determine a desired ATM. As the chart illustrates, the ATM index of the debt portfolio is high compared to the reference countries and developed countries<sup>1</sup>.

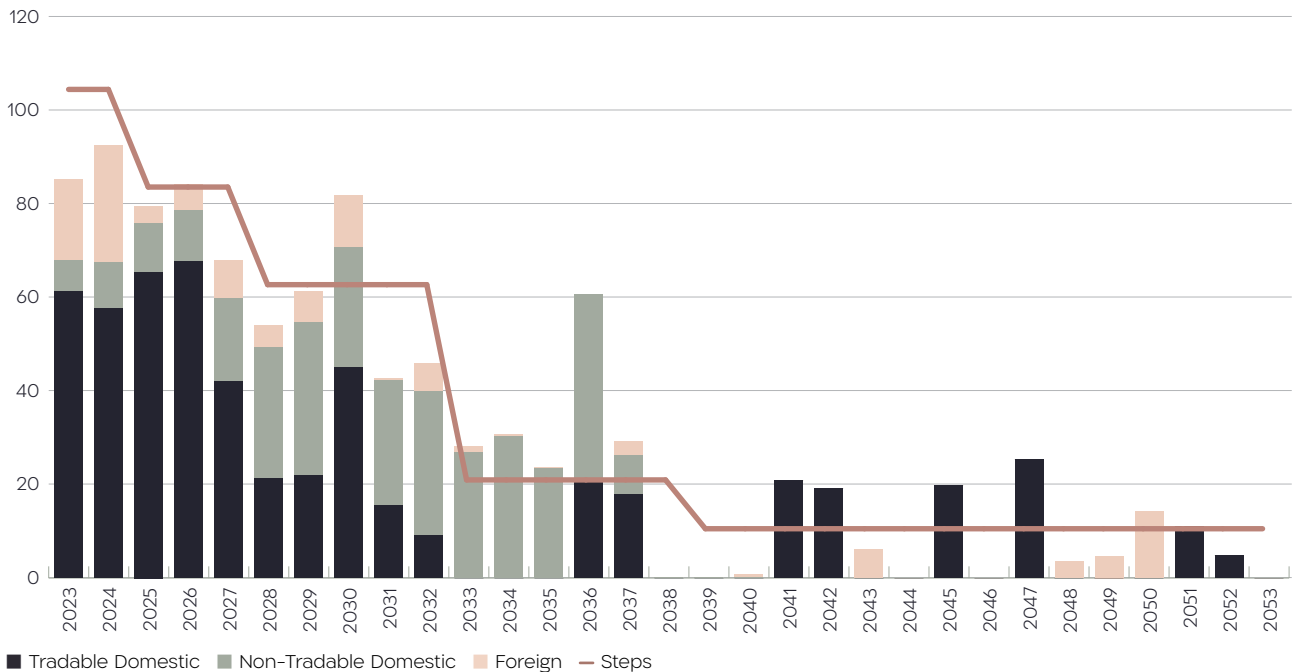
<sup>1</sup>Source: The Ministry of Finance and the Bank of Israel, for the other countries - Fiscal Monitor, October 2022.

A global comparison of the ATM index



Several models are used to manage the refinancing risk:

→ **The issuances (steps) model** - maintains a stable debt structure by a fixed issuance policy.



→ **A model to open short series** - opening new government bonds within a year that smooths out redemptions at a monthly level, as part of the mitigation of the refinancing risk and the volatility of the interest budget.

→ **Continuous tracking of main indicators** - such as the indices of the average time to debt redemption (ATM) and the scope of the short-term debt out of the total debt (the Rollover Ratio) as detailed above.

2

**Liquidity Risk** - a risk that the existing financing sources would prove to be insufficient to finance the needs of the state at any given time. An estimate of the risk and its management are performed using models, scenario analysis (a main scenario, stress scenarios, and extreme scenarios), and daily tracking simulations. In addition, liquidity tools are used, including short-term bonds, switch auctions, and buyback auctions.

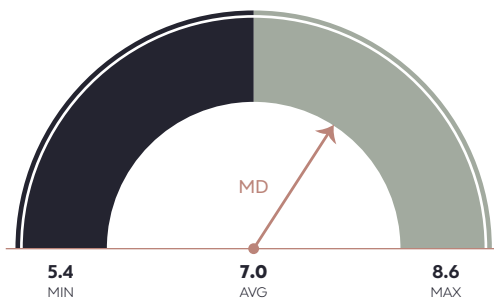
The State of Israel maintains a liquidity cushion in line with the risk management strategy, taking into account the gap between income and expenses and maintaining a minimum account balance to deal with various scenarios.

3

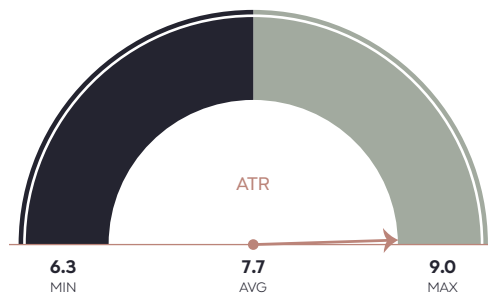
**Market Risk** - risk of changes in the scope of government debt and the interest budget as a result of changes in market factors (the index, interest rates, and exchange rates). Estimation and management of this risk are carried out using models, scenarios, and simulations as well as using hedging of the exposure via financial instruments (such as Forward transactions).

This risk is estimated using the following indices:

→ Modified duration ("MD") - an index that helps examine the impact of the interest rate on the debt's market value. This year, the total MD of the government's debt decreased to 7.4 from 8.3 in 2021. This index has trended downward since 2020. The main reason for the downtrend is less financing compared to 2021 and financing for shorter periods.



→ ATR - average time to refinancing, is an index that assesses the issuer's interest rate risk. The ATR is close to the ATM, at 9.0, which is a level similar to recent years.



→ Changes in the consumer price index - the index-linked debt channel constitutes about 52% of the debt stock as of the end of 2022. The main sensitivity of the debt portfolio is the exposure to the consumer price index, so a change of approximately 1% in the index would result in a change of roughly NIS 5.4 billion of absolute value.

→ Changes in the currency exchange rate - the foreign-currency-linked debt channel constitutes roughly 15% of the debt stock as of the end of 2022. Changes in the foreign currency exchange rate would impact the debt stock as well as the unhedged current interest payments. The GDMU executes hedging transactions to mitigate the risk of changes in foreign currency exchange rates.

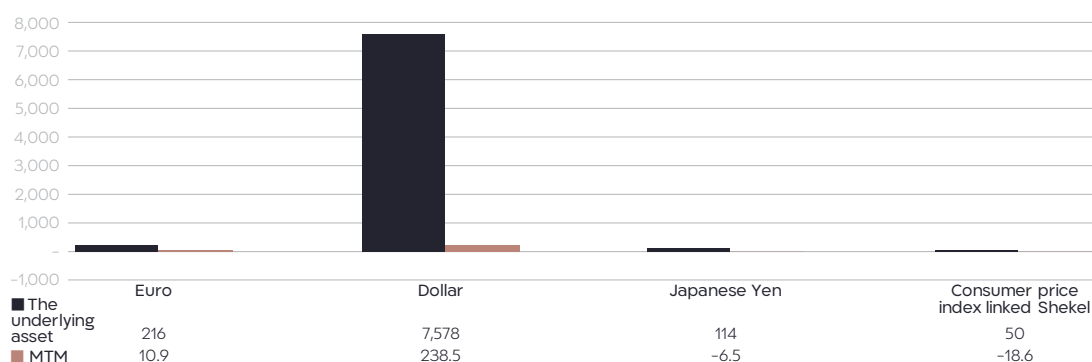
## 4

**Credit Risk** - the state's involvement in hedging transactions exposes the government to credit risk if the counterparty in the transaction becomes insolvent. The strategic goal of the hedging plan is the mitigation of the exposure of government debt to changes in the foreign currency exchange rates, as part of managing the market risks. Hedging comprises long-term transactions using Cross Currency Swaps and short-term transactions using Forwards and FX swaps. In 2022, the GDMU executed hedging transactions for principal and interest payments in US dollars and Euros of roughly USD 5.7 billion. Hedged external debt comprises is about 15% of the total external debt stock for 2022.

To minimize the impact of credit risk, hedging transactions are performed exclusively with Israel's main market makers, all of whom have signed CSA agreements under an ISDA contract. Under this agreement, a calculation is made weekly, according to which collateral is transferred based on the fair value of the transactions. Transferring of the collateral aids in reducing exposure to the insolvency risk of the counterparty.

As of the end of 2022, the hedging transaction stock of the government amounted to about USD 8,185 million (the hedged amount). The mark-to-market of all the positions as of the end of 2022 was approximately USD 206 million, to the benefit of the state, in light of the significant devaluation of the Shekel against the US Dollar and the foreign currency basket in 2022.

### Hedging transactions and Mark to Market



## 5

**Additional risks** - as part of the assessment of future risks that might have an impact on the government's debt, an estimation of additional risks is performed to map out and track a comprehensive financial risk map.

### Additional models to manage government debt risks

- Cost risk model - analysis of risk cost in the short-, medium-, and long-term financing policy.
- Debt structure simulations - constructing simulations of government debt development in the short-, medium-, and long-term according to the main exposures and under different financing strategies.
- Debt-to-GDP forecasts - the debt-to-GDP ratio is a major indicator in estimating the financial resilience of the state. Forecasts of the development of the debt-to-GDP ratio under various market and macroeconomic scenarios help improve government debt management.
- Financial pricing - using various analytical models to price bonds, hedging transactions, and more.
- Interest payment forecast - the forecast is constructed using a bottom-up method, reorganizing the current maturities according to the expected changes in market factors domestically as well as abroad and according to forecasts of the changes in the amortization schedules (new financing, switch auctions, and buyback auctions).

## 6

## Average series size and the number of series

The policy of the Accountant General's Department is to limit the number of government bond series in circulation and increase the volume of the series.

One new series was issued in the tradeable domestic market in 2022:

- ILGOV 1152, maturing in 2052.

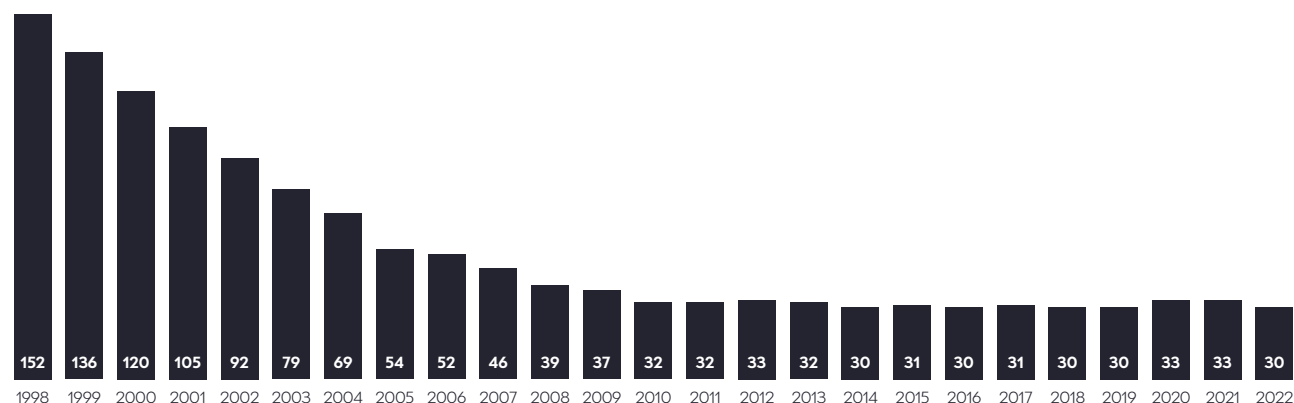
In addition, as part of the strategy, in 2022 a methodology was implemented to replace on-the-run bonds with off-the-run bonds (thereby making the latter on-the-run bonds). Here are the details of the bonds:

- ILGOV 1024 was replaced by ILGOV 0425 as a benchmark for 3-year bonds in Shekels.
- ILGOV 0226 was replaced by ILGOV 0928 as a benchmark for 5-year bonds in Shekels.

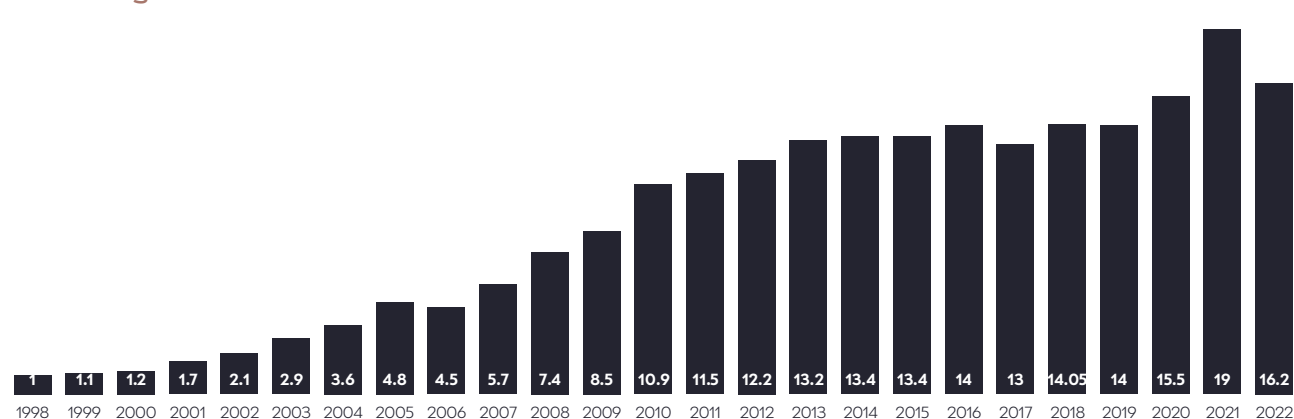
Four series matured in 2022. The total number of tradeable series decreased compared to 2021, to 30. In addition, no short-term bonds were issued during the year.

As can be seen in the charts below, over the years the number of tradeable series decreased significantly, while the average size of the series increased, as a result of debt management policy. This policy leads to improvements in bonds being more tradeable and liquid, thereby facilitating a reduction in financing costs. This will remain the guiding policy going forward.

The number of tradeable series in 1998-2022



The average series size in billion NIS 1998-2022





**NON-  
TRADABLE  
FUNDING**

## Non-Tradable Funding in 2022

In 2022, the total amount of non-tradable debt was NIS 12 billion. This debt was raised using the following instruments:



**Designated bonds for pension funds** - "Arad" bonds, which have a fixed interest and are indexed. In recent years, these bonds have had higher yields than corresponding yields in the tradable market and constituted an actual state subsidy for pension funds. The volume of issuances in this channel in 2022 stood at roughly NIS 8 billion, a decrease of approximately 78% compared to roughly NIS 37.3 billion in 2021. In 2022, the sum of net funding in designated bonds for pension funds amounted to roughly NIS 4.9 billion.



**Designated bonds for insurance companies** - Between 1965 and 1990, non-tradable bonds for life insurance institutions were issued. These bonds are named "Hetz" (life-indexed) and were issued for policies featuring a guaranteed yield. These bonds are comprised of an indexed fixed interest rate of 4.0%-6.2%. In the early 1990s, new entries to this channel were ended. In 2022, the volume of issuances in this channel stood at roughly NIS 3.7 billion, a decrease of about 12% compared to NIS 4.1 billion in 2021. The sum of net funding in this channel in 2022 amounted to negative funding, totaling roughly NIS 558 million.

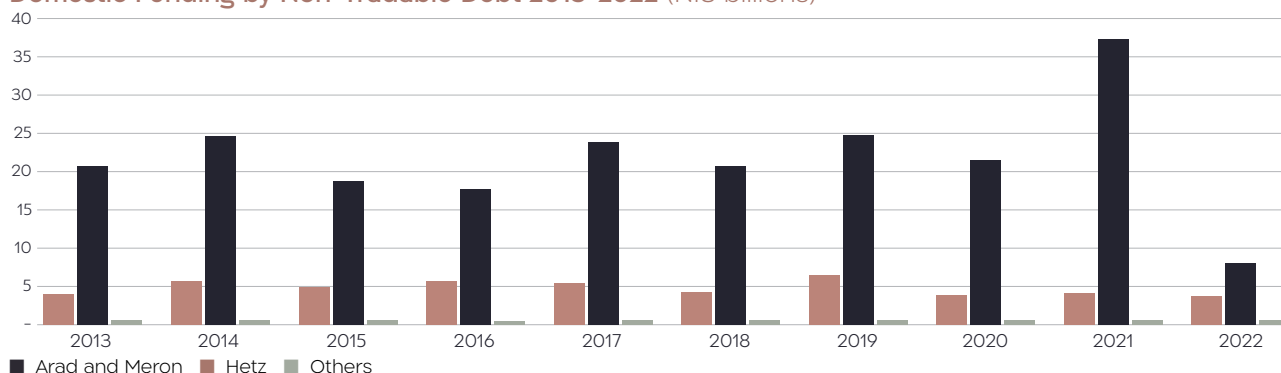


**Emissions and various deposits** - Loans created as a result of historical agreements with provident funds. These are indexed loans with a fixed interest of 4.95%-5.95%. In 2022, funding through emissions amounted to roughly NIS 528 million, with negative net funding of roughly NIS 147 million.

Funding channel	Principal funding	Principal redemptions	Net funding
Pension ("Arad")	7,969	3,046	4,923
Life insurance (Hetz)	3,675	4,233	(558)
Others	528	675	(147)
<b>Total</b>	<b>12,172</b>	<b>7,954</b>	<b>4,218</b>

\*The data in the above table is presented in NIS millions and refers to 2022.

Domestic Funding by Non-Tradable Debt 2013-2022 (NIS billions)



The above chart illustrates the significant volume of issuances to pension funds relative to other channels from 2013 to 2022. This is due to the pension funds' entitlement to issuances of designated bonds once those bonds fall below the threshold of 30% of the estimated value of their assets. The value of assets in the new pension funds increased in volume over this period as there is a mandatory pension in Israel.

### Designated Bond Reform

Under Chapter III of the Economic Efficiency Law, 2021 (Legislative Amendments for Attaining Budgetary Objectives for the Budget Years 2021 and 2022), the Control of Financial Services (Provident Funds) Law, 2005 (hereafter - the Law), was amended. Under the amendment to the Law, Article E1 was added, which deals with guaranteeing a yield for pension funds.

In this chapter, we will describe the mechanism before the reform, the challenges in the prior mechanism that led to the advancement of the reform, the new mechanism, and the expected effects of the new mechanism on the capital market and government debt management.

### Implications and Challenges Before the Reform

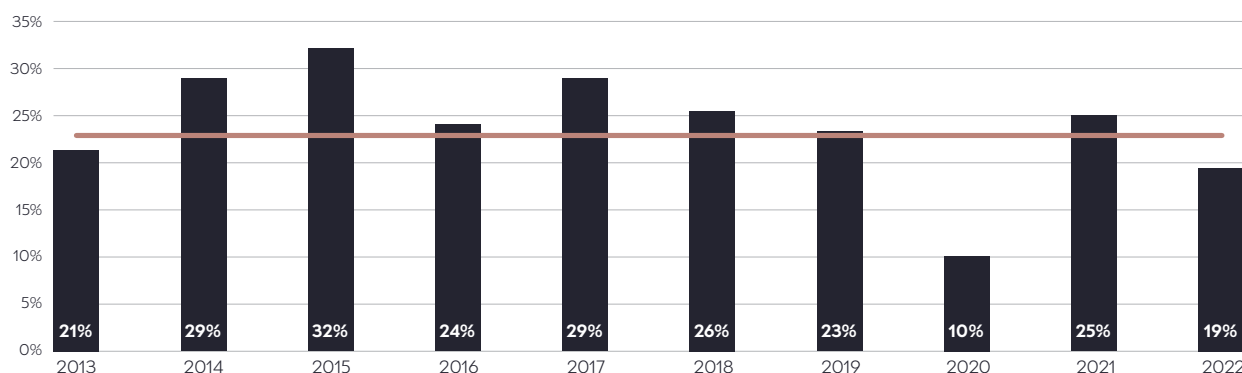
→ Increase in the stock of indexed debt - as of 2022, the indexed debt stood at roughly 52% of the total debt. Most of the increase in the rate of indexed debt in recent years stems from net funding of designated bonds.

→ Displacement of tradable debt issuances - The increase in non-tradable debt funding led to the displacement of tradable debt and has a negative effect on the volume of tradable government bond issuances in the primary market. Additionally, it lowers the level of liquidity and tradability in the secondary market.

For a steady deficit path of 3%, it is estimated that the level of tolerance (the percent of maximum non-tradable funding out of total funding, without impairing tradable domestic and external funding) is 23%. With certain adjustments, it is possible to expand tolerance with non-tradable funding of 25%.

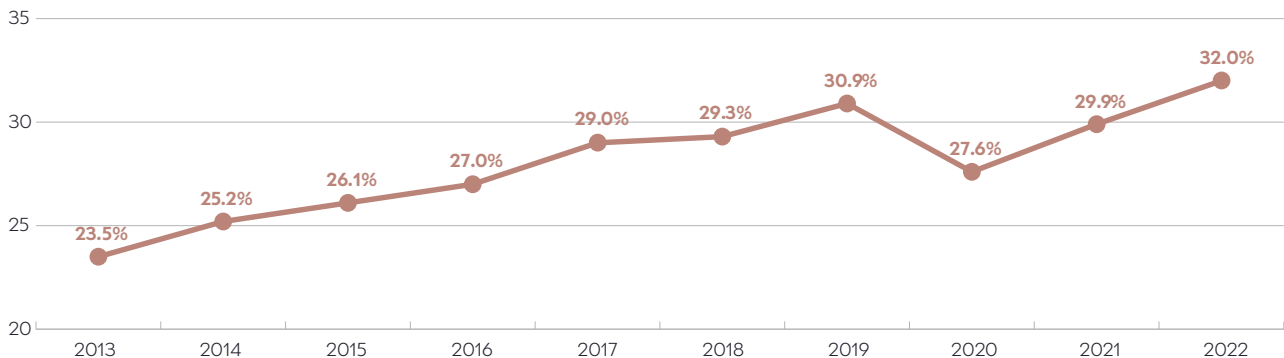
The following graph shows the rate of funding of non-tradable domestic debt relative to total funding for 2013-2022. It is apparent that as of 2014, the average issuance rate was above the tolerance threshold, except for 2020 in light of the effects of COVID-19, and for 2022, in light of the introduction of the reform and the end of designated bond issuances starting in October.

Non-Tradable Funding, Percentage of Total Funding, 2013-2022



The stock of non-tradable domestic debt at the end of 2022 grew by approximately 6.7% and stood at roughly NIS 333.6 billion. This constitutes roughly 32% of total debt. The stock of designated bonds issued to the pension funds ("Arad" and "Meron" bonds) grew by roughly 7.3% and amounted to NIS 268.8 billion, compared to approximately NIS 250.3 billion in 2021.

**Non-Tradable Stock, Percentage of Total Stock, 2013-2022**

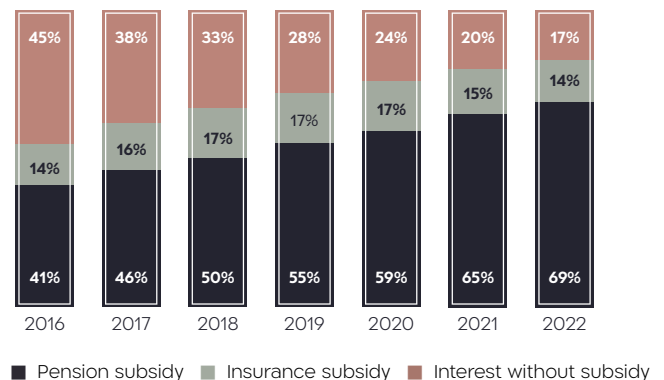


→ Increase in interest expenses in the wake of subsidies for designated bonds - Similar to the trend in recent years, in 2022 the reduction in interest expenses in the tradable government market continued while the interest expenses of designated bonds also rose due to high positive net funding in non-tradable debt, and decreasing yields in the tradable market. The estimated volume of subsidies for designated bond issuances at the end of 2022 stood at roughly NIS 12.8 billion, compared to NIS 10.9 billion at the end of 2021 (an increase of roughly 18%).

**The annual budget estimate subsidy for designated bonds, 2016-2022 (NIS millions):**

Year	Pension subsidy	Insurance subsidy	Total	Percentage of Total Interest Payments for Designated Bonds
2016	3,829	1,368	5,197	55%
2017	4,652	1,558	6,210	62%
2018	5,416	1,765	7,181	67%
2019	6,259	1,927	8,186	72%
2020	7,375	2,057	9,432	76%
2021	8,867	2,043	10,910	80%
2022	10,719	2,121	12,840	83%

The following chart illustrates a division of the interest payments on non-tradable debt into the interest expenses that would have been paid if not for the subsidy and the subsidized portion - pension subsidy and insurance subsidy, for 2016-2022 →



**The estimated subsidy for issuing designated bonds is calculated as a product of the volume of annual issuances and the yield gap between designated bonds and tradable indexed government bonds carrying the same duration (market yield).**

→ Pro-cyclical mechanism - Designated bond issuances were executed in accordance with changes in the value of the asset portfolios of the pension funds. The portfolio value is mainly affected by the yields of the portfolio and by deposits of the policyholders.

In times of crisis, the pension funds yield lower returns and, consequently, the demand for "Arad" government bond issuances diminishes. This is in opposition to growing government financing needs and an increase in government bond funding. In times of growth in the capital market, the reverse occurs and there is a pro-cyclical mechanism between the government financing needs and the volume of the pension funds' demand for issuance of "Arad" bonds.

## The New Mechanism - Yield Guarantee Mechanism

The challenges in debt management led to an alternative mechanism (hereinafter - the new mechanism) that on one hand preserves the guaranteed yield for part of the pension portfolio, similar to the old mechanism, and on the other hand, addresses the challenges detailed above.

The new mechanism took effect on October 1, 2022. The last date when "Arad" bonds were issued was September 1, 2022, and as of October 1, 2022, the GDMU began to provide a guaranteed yield to the pension funds, per the mechanism detailed below.

The yield guarantee mechanism states that instead of the pension funds seeking "Arad" bonds to meet 30% of the fund's assets, the pension funds will, instead, invest the same funds in the capital market and yield a return on them. On these funds, the state will provide an annual yield guarantee at an annual indexed rate of 5.15% (hereinafter - the target yield). Five years after the yield guarantee, a reconciliation will be conducted with the pension funds for the gap between the return that they yielded in the free market and the target yield. If the return yielded by a pension fund on the yield guaranteed assets is below the target yield, then the state will pay the gap between the target yield and the return yielded by the pension fund. If the return yielded by a pension fund on the yield guaranteed assets is above the target yield, then the pension fund will transfer the gap between the target yield and the return yielded by the pension fund to a dedicated account in the Bank of Israel. The funds accumulated in the Bank of Israel, as well as additional funds that the state will allocate for this purpose as defined in the law, will be used by the state to finance the future supplementation of the yield, to the extent required.

To ensure that the yield-guaranteed assets are optimally managed by the pension funds and to avoid "moral hazard", it was determined that the yield-guaranteed assets will be managed separately from the other fund assets in a dedicated investment channel (hereinafter - "yield guaranteed channel"). The assets in the yield-guaranteed channel will be managed as similarly as possible to the largest portfolio within the same pension fund.

## Implications of the New Mechanism

As of the end of 2022, the stock of designated bonds for the pension funds stood at roughly NIS 268 billion. The application of the new mechanism does not eliminate previously issued designated bonds. The state will fulfill its obligations concerning these bonds until the original redemption date. When the designated bonds are redeemed, the funds will be guaranteed by the new guaranteed yield mechanism, so that 15 years after the date the new mechanism is applied, the designated bonds are expected to be fully replaced by assets invested in the capital market, for which the state guarantees a yield under the new mechanism. Therefore, there is a gradual transition for the pension funds and the government from a designated bond mechanism to a "guaranteed yield" mechanism.

**The new mechanism is expected to affect the market, government bond yields, and the GDMU funding strategy. The following is a description of the expected effects:**

**1** Asset composition and investment policy of the institutional bodies - The pension funds will be forced to invest additional assets in the capital market. This is an upward trend in the volume of investments that the pension funds will execute in the market relative to the years in which "Arad" bonds were issued. This increase will pose a challenge to the investment portfolio management of the pension funds and may affect the asset composition and the investment policy.

---

**2** Effect on tradable government bond yields - Due to the discontinuation of issuances of "Arad" bonds, the GDMU will increase the volume of funding, both in the domestic tradable channel and in the external channel per the financing needs of the government, as well as additional considerations. This is expected to deepen the domestic market and improve access to international markets. The trend of increased supply of government bonds and conversely the trend of demand from the capital market are liable to affect the yields of these bonds. It is important to note that government bond yields are affected by many additional factors, such as the interest environment, inflation expectations, and others.

---

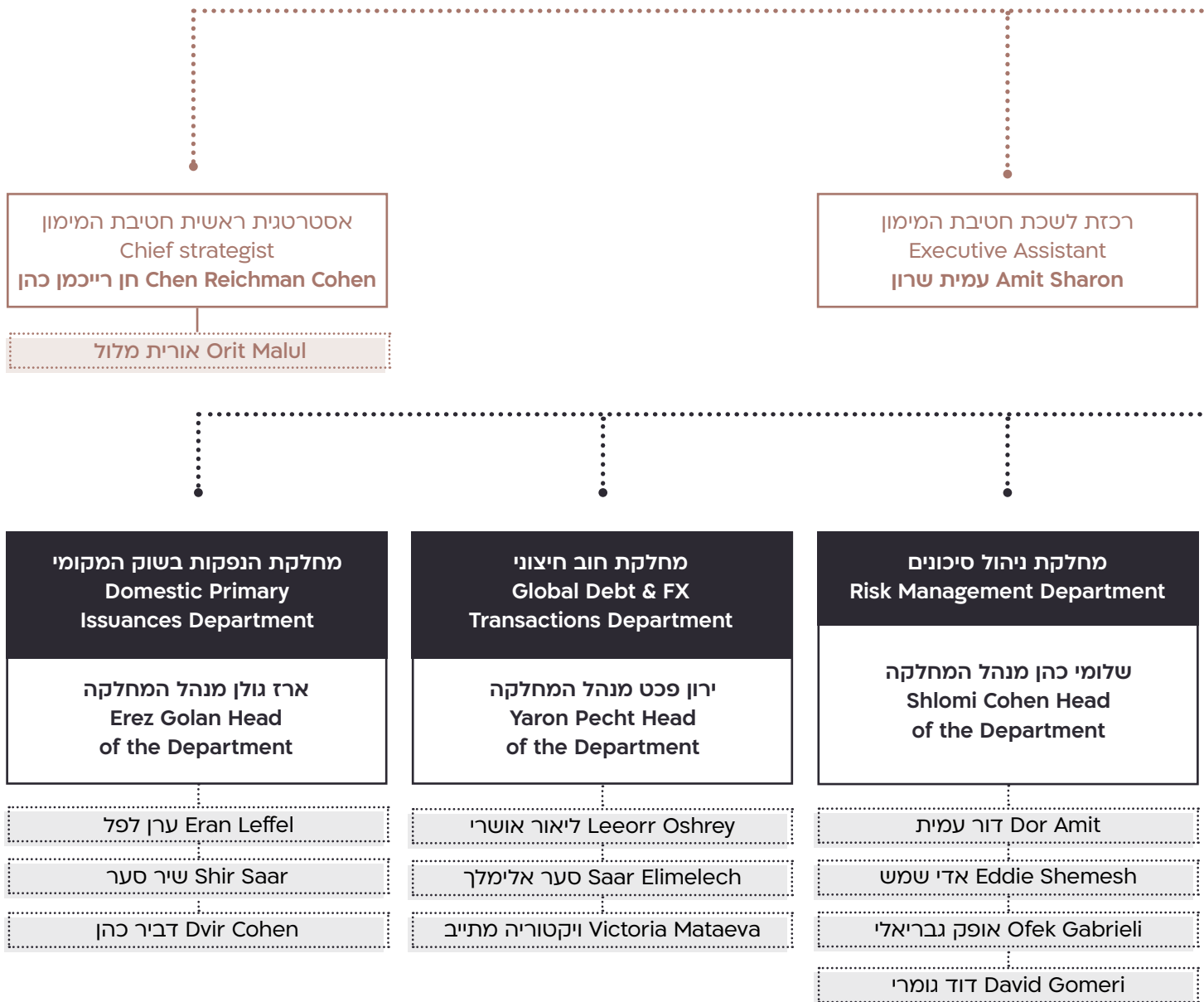
**3** Effect on government debt management strategy - In light of the discontinuation of "Arad" bond funding, the government's primary financing channels will be tradable financing channels in Israel and abroad, and will be managed at a higher level of planning and efficiency compared to before the reform. Due to the reform, the GDMU will be better able to adjust both the debt stock and the current funding to the long-term strategy.





# Organizational Chart

Government Debt Unit



# מבנה ארגוני

יחידת החוב הממשלתי

גיל כהן סגן בכיר לחשב הכללי  
מנהל חטיבת המימון והאשראי  
Gil Cohen Senior Deputy Accountant  
General Head of Finance, Debt &  
Credit Division

יחידת החוב הממשלתי  
Government Debt Management Unit

פיליפ איחלזון מנהל היחידה  
Philip Yhelzon  
Head of the Unit

מחלקת מערך אמצעי ובקרת מסחר  
Middle Office & Secondary  
Market Compliance Department

טל פלג מנהל המחלקה  
Tal Peleg Head  
of the Department

אריאל קמחי Ariel Kimhi

מחלקת חוב מקומי וניהול זילות  
Domestic Debt  
and Cash Management

יוסי ניסים מנהל המחלקה  
Yossi Nisim Head  
of the Department

זוהר ברוך Zohar Baruch

רונית רוטנברג Ronit Rotenberg

מחלקת תקבולים ותשלומים  
Receipts & Payments Department

אדי טרנר מנהל המחלקה  
Edi Terner Head  
of the Department

חנה סלע סגנית מנהל המחלקה  
Hana Sela Deputy Head  
of the Department

אורנה ארד Orna Arad

גנאדי ניימן Gennady Naiman

תהילה אלמקייס Tehila Elmakayes

יעל לוין Yael Levin