HELLENIC REPUBLIC

FUNDING STRATEGY FOR 2023

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I PUBLIC DEBT MANAGEMENT OF THE HELLENIC REPUBLIC: MAIN ACHIEVEMENTS IN 2022

LOOKING BACK AT THE 2022 DEBT MANAGEMENT EXECUTION: MAIN ACHIEVEMENTS

PDMA's flexible and proactive debt management allowed to successfully execute Greece's funding program and further improve its debt profile in a challenging environment, thus re-affirming its regular issuer status

✓ **Despite challenging conditions, flexible and proactive debt management allowed Greece to both meet 2022 funding needs by a comfortable margin and further optimize its debt service schedule**

- In view of this year's elevated market volatility, **PDMA adopted a flexible debt management approach**, seizing favourable market windows to **raise a total of €8.3bn** through GGB issuances, incl. €5.5bn through syndicated transactions (10Y new issue, 5Y tap, 5Y floating-rate note new issue) and €2.8bn through auctions (5Y floating-rate note, 10Y, 11Y, 15Y, 20Y taps)
- PDMA also continued the **proactive management of Greece's debt portfolio** with the **early repayment of €1.9bn of IMF and €2.7bn of GLF loans**, as planned in the 2022 Funding Strategy
- This allowed to **confirm the firm downward trajectory of Greece's debt-to-GDP ratio**, expected to **decrease by more than c. 37pp of GDP in only 2 years to reach 169% in 2022** (vs 206% in 2020)

✓ **Credit spreads remained contained and targeted issuances contributed to maintaining a tradable yield curve**

- **Targeted GGB issuances supported liquidity at specific points of the yield curve** (notably for the 2027 and 2032 maturity points)**,** in line with PDMA's objective to maintain a fully tradable yield curve for Greece
- **Greece's 10Y-spread to Germany ended the year at c. 216bps, in line with February levels** and **closer to some Eurozone peers (e.g.: Italy, Cyprus) than at the beginning of the year,** thus highlighting Greece's resiliency in the context of tighter financing conditions and uncertain economic outlook in Europe

✓ **The investor base for this year's syndicated bond issuances has remained diversified -** it was characterized by

- **A strong presence of real money players**, still representing the bulk of the investor base
- **A sustained presence of long-term investors,** in line with 2021 for comparable maturities

✓ **Solid credit fundamentals, supported by a strong and resilient economic recovery and the continued implementation of reforms, have translated into 3 rating upgrades in 2022**

- **S&P, DBRS and R&I upgraded Greece in 2022**, respectively from BB to BB+, BB to BB(high) and BB to BB+: this means that **Greece is now only 1 notch away from the Investment Grade status for 4 rating agencies** (S&P, DBRS, Scope, R&I)
- **The rating outlook has been confirmed at stable** by DBRS, Fitch, Moody's and S&P, while **Scope attributed a positive outlook** in December 2022

FLEXIBLE AND PROACTIVE DEBT MANAGEMENT HAS ALLOWED GREECE TO SUCCESSFULLY NAVIGATE THROUGH A CHALLENGING ENVIRONMENT

- **In view of challenging market conditions, PDMA adopted a flexible debt management approach in 2022, raising debt through syndication and auction to seize favourable market windows**
- **This allowed Greece to raise €8.3bn at satisfactory conditions, enough to meet 2022 financing needs by a comfortable margin**
  - 2022 financing needs ended lower than anticipated in the 2022 funding strategy thanks to this year's strong revenue collection performance
- **PDMA's debt management also remained proactive, going ahead with the planned early repayments of official debt to alleviate short-term debt service and smoothen the redemption profile**

Overview of 2022 Greece Government Bond issues

ISINs	Issue/ Reopen. Date	Maturity Date	Tenor	Demand Amount	Issued Amount	Subscr. Rate	Yield	Spread vs Bund
Syndicated issuances								
GR0514024216	21/07/2022	15/12/2027	5-Y	-	€1.0bn	-	E3m+123bps	
GR0118020685	27/04/2022	22/04/2027	5-Y	€4.8bn	€1.5bn	3.2x	2.37	185
GR0124038721	19/01/2022	18/06/2032	10-Y	€15.0bn	€3.0bn	5.0x	1.84	184
Auctions								
GR0124038721	14/11/2022	18/06/2032	10-Y	€1.0bn	€200m	5.1x[1]	4.44	245
GR0514024216	25/10/2022	15/12/2027	5-Y	€1.9bn	€1.2bn[2]	2.5x[1]	E3m+123bps	
GR0124038721	11/07/2022	18/06/2032	10-Y	€1.9bn	€500m	3.9x[1]	3.67	241
GR0138015814	30/05/2022	30/01/2042	20-Y	€675m	€150m	4.5x[1]	3.56	230
GR0133011248	30/05/2022	30/01/2037	15-Y	€920m	€250m	3.7x[1]	3.51	230
GR0128015725	23/05/2022	30/01/2033	11-Y	€1.6bn	€500m	3.2x[1]	3.61	259
				Total:	**€8.3bn**			

Source: PDMA
Notes: (1) Coverage ratio; (2) Includes a further €225m of non-competitive bids that were subsequently accepted

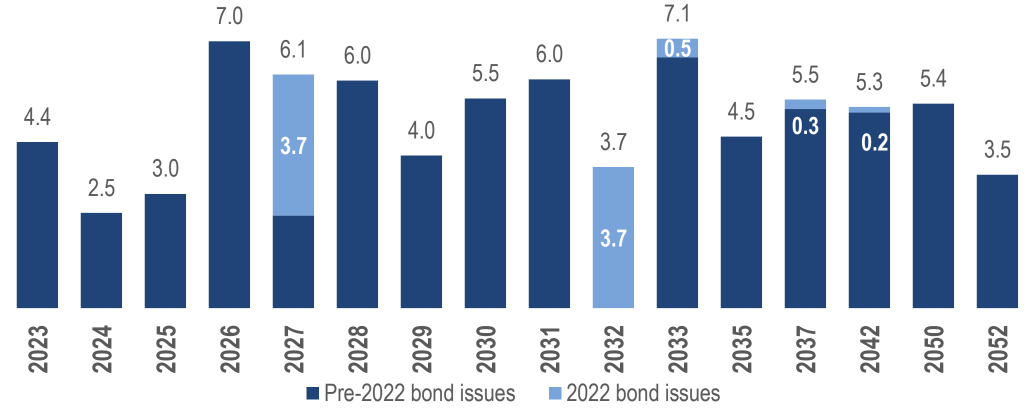
Overview of recent debt issuance and liability management operations

Source: PDMA
Note: (1) Floating-rate note

TARGETED ISSUANCES HAVE CONTRIBUTED TO MAINTAINING A TRADABLE YIELD CURVE

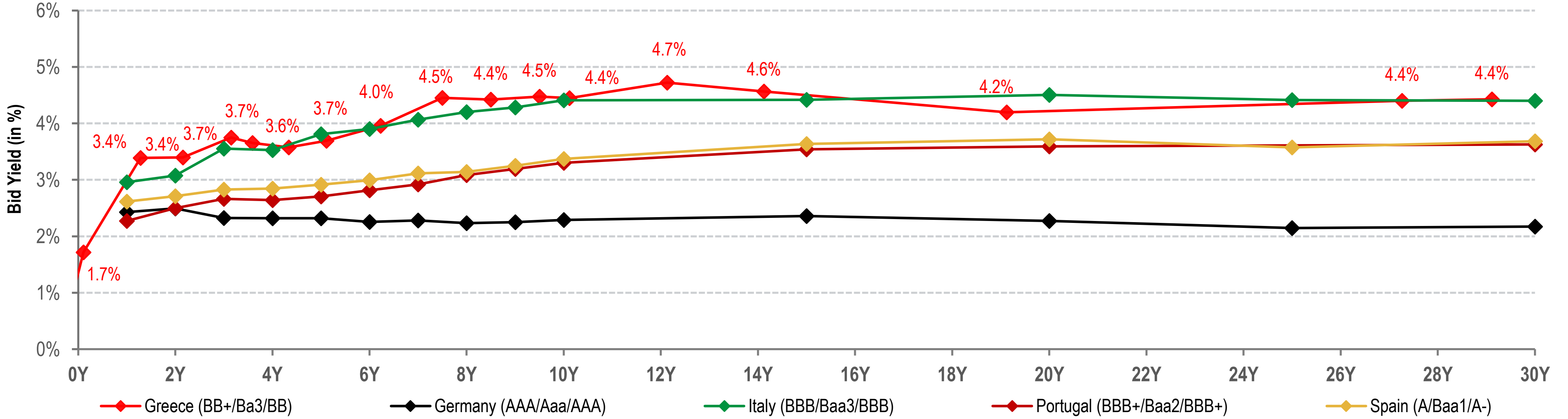
- **Market operations in 2022 have supported the supply of GGBs for key maturity points of the Greek yield curve, including the 5-Y and 10-Y maturity points**
  - All the relevant maturity points of the Greek yield curve now entail benchmark-size GGBs
- **This targeted issuance strategy has allowed to support GGB liquidity and to maintain a fully tradable yield curve**

Outstanding amount of GGB per maturity *(€bn)*



Source: PDMA, Bloomberg as of 21/12/2022

Selected European sovereign yield curves (as of 21/12/2022)

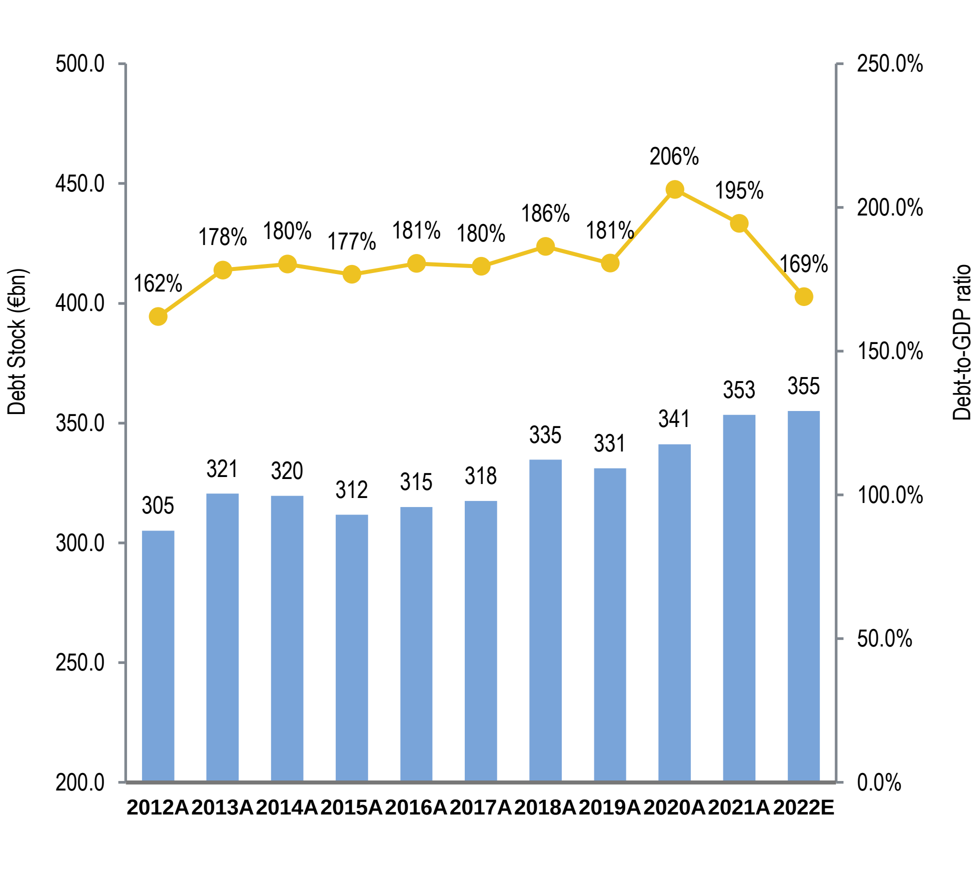


Source: Bloomberg as of 21/12/2022
Note: Sovereign credit rating by (S&P/Moody's/Fitch)

SUCCESFUL DEBT MANAGEMENT UNDERPINS THE FIRM DOWNWARD TRAJECTORY OF THE DEBT-TO-GDP RATIO

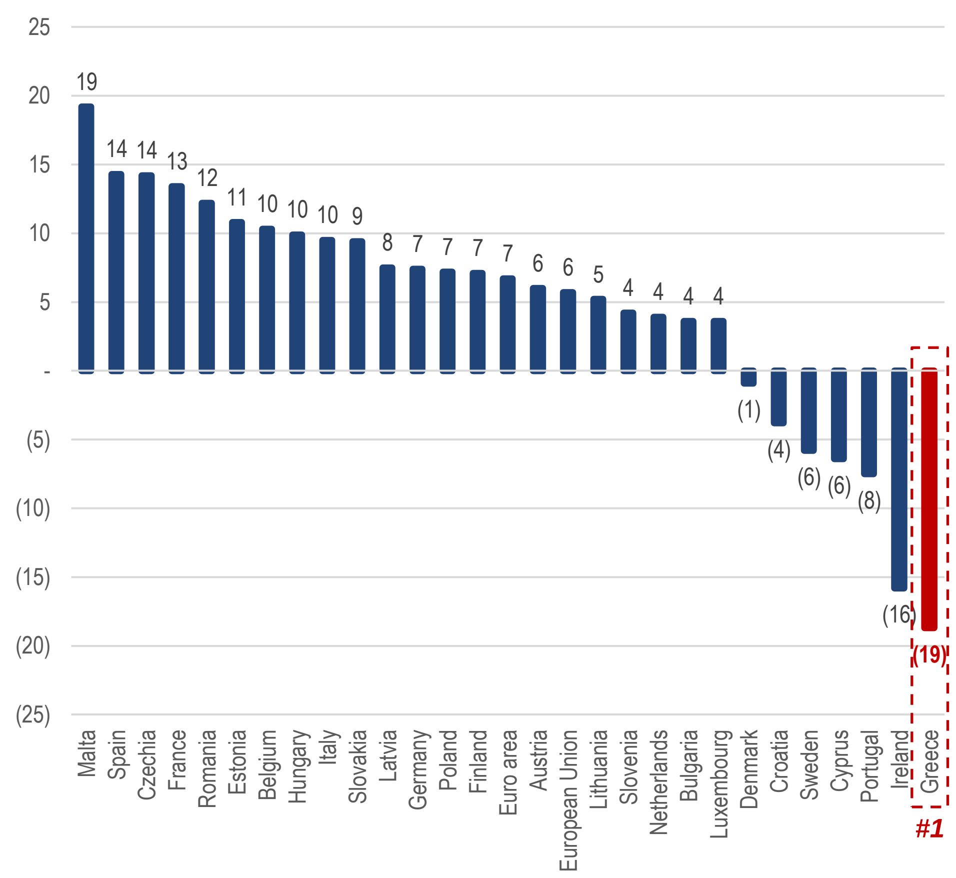
PDMA's flexible debt management strategy, together with Greece's fiscal performance and strong nominal growth, has been instrumental to the recent drastic decline of the Greek public debt ratio – expected by the European Commission to be the fastest deleveraging between 2019 and 2023 in the Euro Area

Evolution of Greece public debt *(€bn and %GDP)*



Sources: 2023 Final Draft Budget Report (Nov. 2022), European Commission (AMECO database)

Difference in public debt stock *(ppts of GDP, 2019-2023F)*

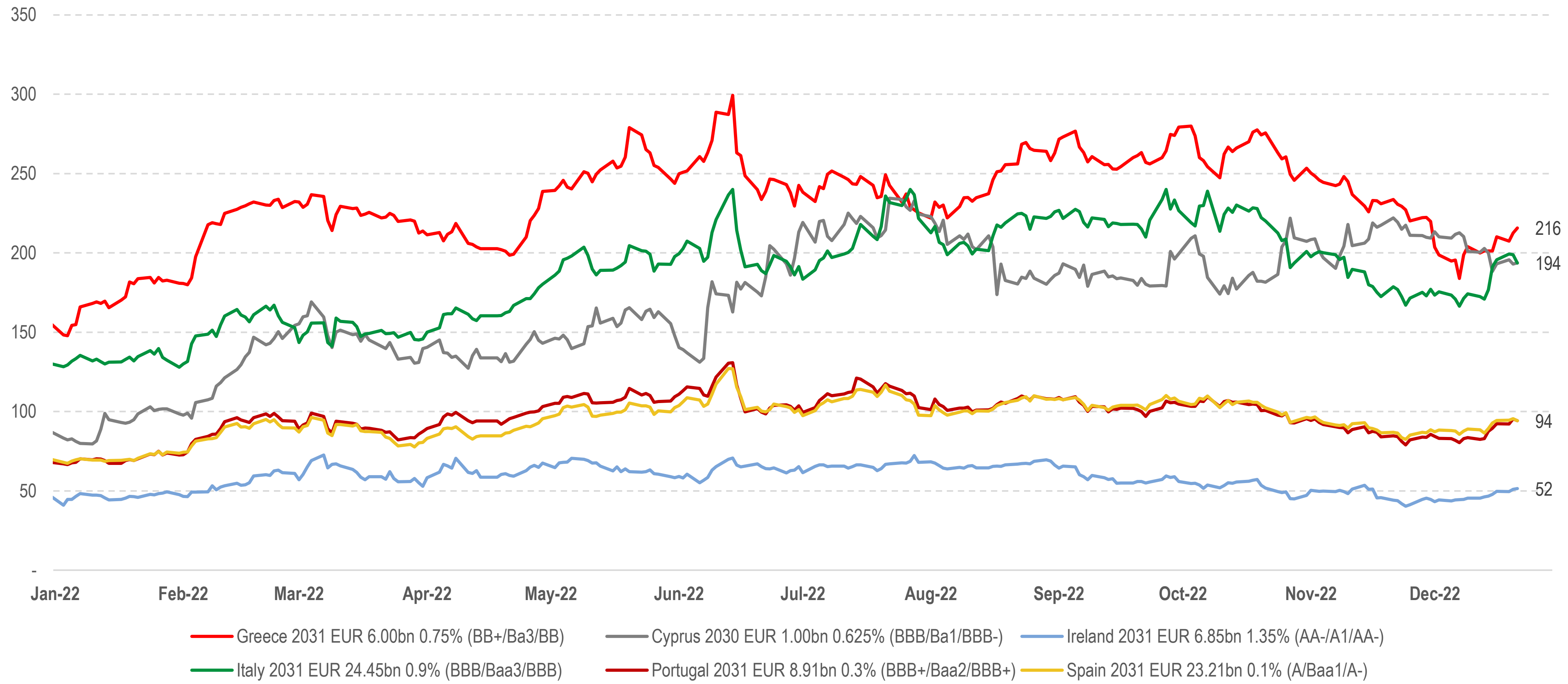


Source: European Commission, Autumn 2022 Economic Forecast

SPREAD LEVELS HAVE REMAINED CONTAINED DESPITE A MORE CLOUDED ECONOMIC OUTLOOK FOR THE EUROZONE

Despite the economic outlook and financing conditions deteriorating in the Eurozone, Greece's credit spread to Germany has remained contained, gradually converging toward Cyprus' and Italy's over the course of the year

Evolution of 10y-bond spread to German Bund *(bps)*



Source: Bloomberg as of 21/12/2022
Note: Sovereign credit rating by (S&P/Moody's/Fitch), Spread compared to Bund 2031 €28bn 0%

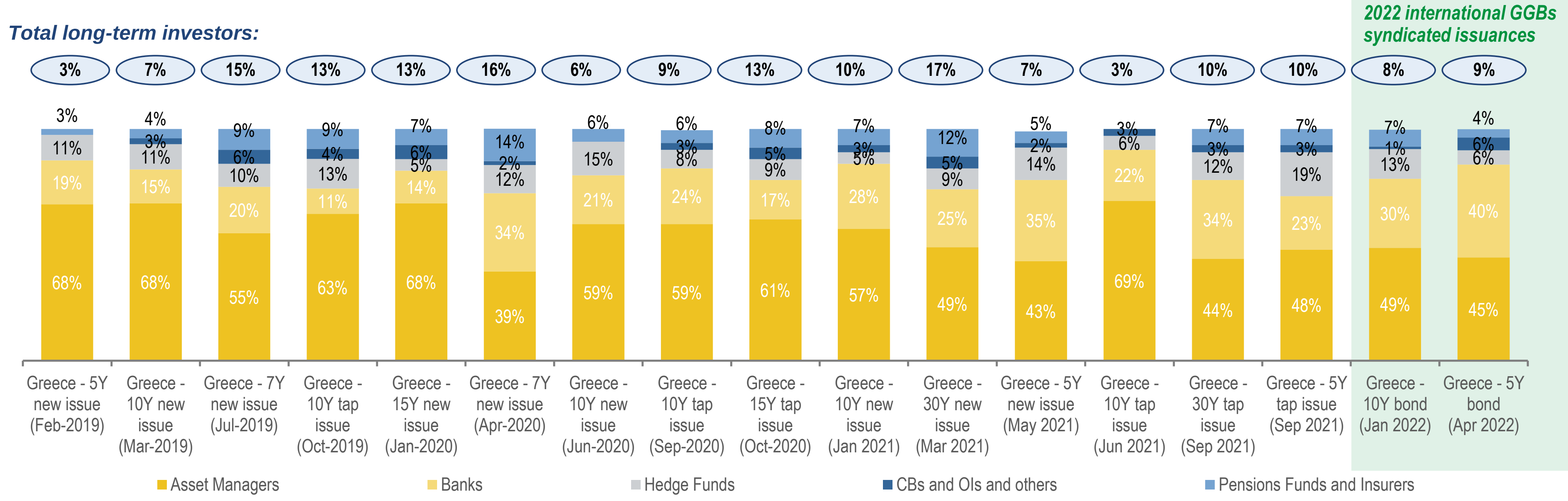
THE INVESTOR BASE HAS REMAINED DIVERSIFIED AND STABLE DESPITE A CONTEXT OF MARKET UNCERTAINTY

The share of long-term investors in internationally syndicated bond issuances was maintained in 2022

Investor type breakdown of 2022 Greek Government Bond allocations

- **The participation of Central Banks, pensions funds and insurances to the GGB market was maintained, representing 9% in 2022**
- **The bulk of the investor base remained composed of asset managers and banks, which represented on average 82% of the total allocation of GGBs in 2022, in line with previous years (80% in 2021 and 79% in 2020)**

Allocation of recent Greece government bond syndicated issuances by investor types

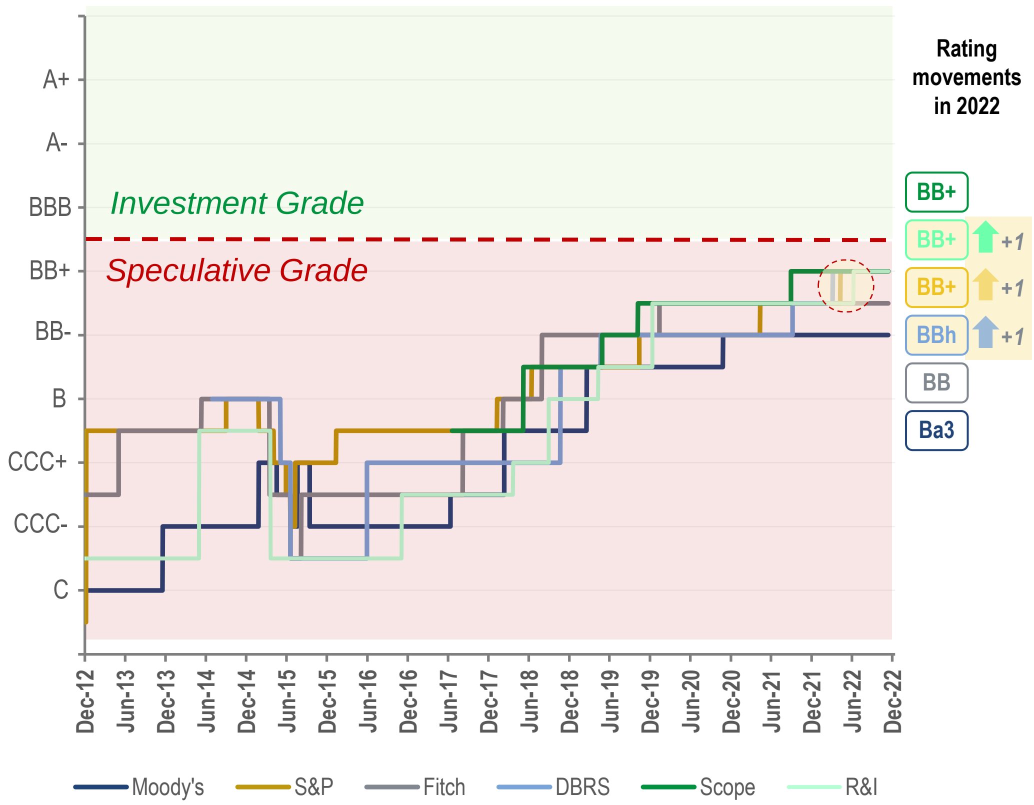


Source: PDMA

GREECE CREDIT RATING IS STEADILY APPROACHING INVESTMENT GRADE

Three agencies upgraded Greece credit rating in 2022 (DBRS by one notch from BB to BB(high); S&P by one notch from BB to BB+; R&I by one notch from BB to BB+), maintaining Greece's re-rating momentum. Scope attributed a positive outlook in December. Greece credit rating now stands one notch below IG for Scope, DBRS, S&P and R&I, two notches below for Fitch, and three notches below for Moody's

Evolution of Greece credit rating since 2012



Sources: DBRS, Fitch, Moody's, S&P, Scope, R&I

Note: DBRS and Scope credit ratings are available since 2014 and 2017 respectively

Selected comments of the rating agencies

A strong revenue performance underpinned by a better than anticipated growth outcome in 2021 and lower expenditures, resulted in a fiscal deficit of 7.4% of GDP, compared to initial estimates of 9.6%. The primary deficit is projected to decline further from 5.0% of GDP in 2021 to 2.0% this year and to turn into a surplus from 2023 onwards. […] Greece's strong fiscal position before the pandemic supports DBRS Morningstar's view that **Greece maintains its commitment to fiscal consolidation and will comply fully with guidelines from the European institutions once targets are reinstated**

SOURCE: DBRS / 16 SEPTEMBER 2022

We expect the Greek economy to expand by close to 6% in 2022 (7.8% year-on-year increase in the first half). This is much stronger than the 3.5% we expected following the onset of the war in Ukraine. […] We assume **Greece will be able to manage the impact of the war in Ukraine** and the expected stagflation in the eurozone over the next three years. **We expect Greece's economic growth will surpass the eurozone average**, including in real GDP per capita terms.

SOURCE: S&P / 21 OCTOBER 2022

NPLs in the banking sector have continued to decline steadily, with the overall NPL ratio reaching 10.0% in 2Q22, down from 20.4% a year earlier. The decline has been driven by securitization transactions and sales by the four systemic Greek banks, incentivized by HAPS. **We expect the NPL ratio to decline to mid-single digits next year.**

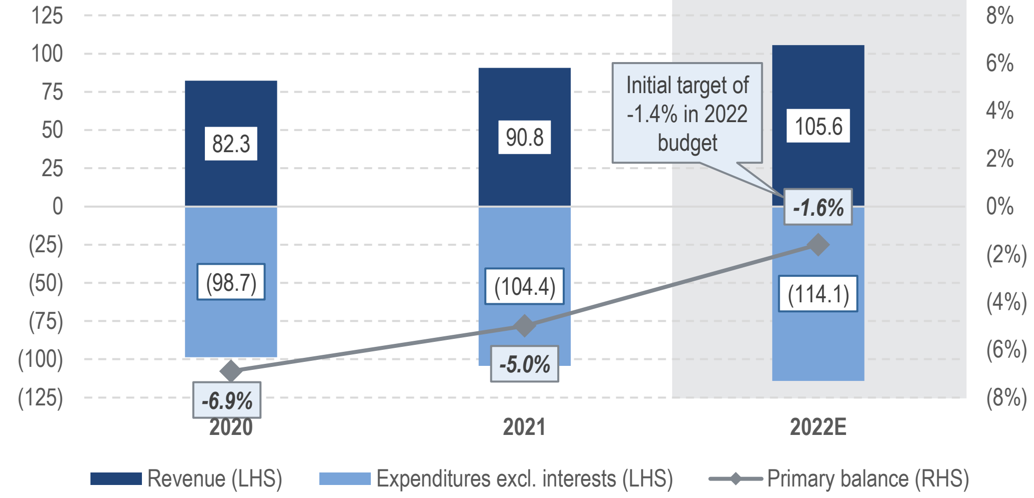
SOURCE: FITCH / 3 NOVEMBER 2022

II 2023 BUDGET: KEY HIGHLIGHTS

GREECE REMAINS COMMITTED TO FISCAL DISCIPLINE

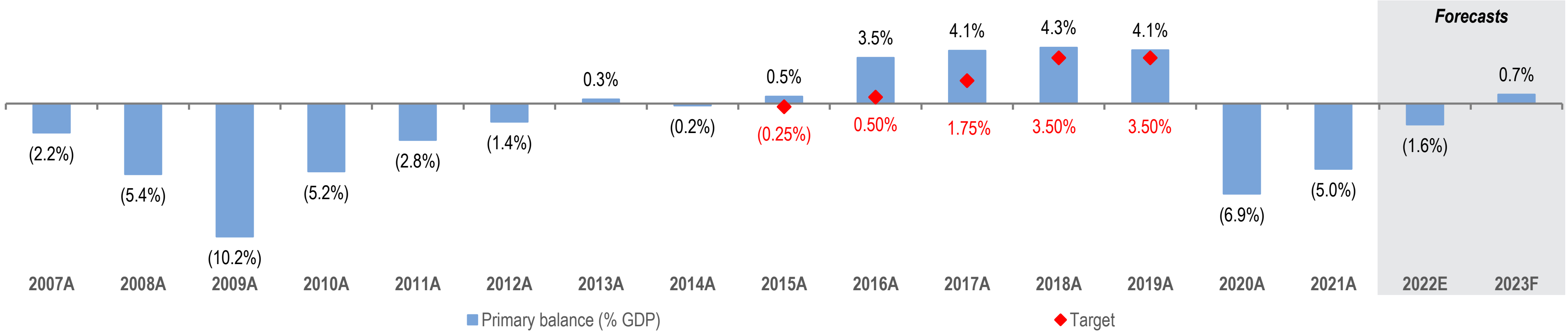
- **Greece sustained a strong fiscal performance prior to the Covid-19 crisis - with primary surpluses outperforming targets, thus creating the space for a strong fiscal response to the pandemic in 2020 and 2021**
- **Higher-than-expected public expenditures in 2022 - aimed at shielding the economy from global inflationary pressures, were almost entirely compensated by strong revenue overperformance, with very little impact on the fiscal consolidation path**
  - The realized 2022 primary deficit is expected to be broadly in line with 2022 Budget targets despite an additional €9.7bn of spending as compared to 2021
- **Greece remains strongly committed to fiscal discipline, with a planned return to primary surplus as early as in 2023**

Revenue, primary expenditures *(€bn)* and primary balance *(%GDP)*



Note: General Government perimeter
Source: European Commission, Autumn 2022 Economic Forecast

Greek primary balance: historical figures and targets *(%GDP)*



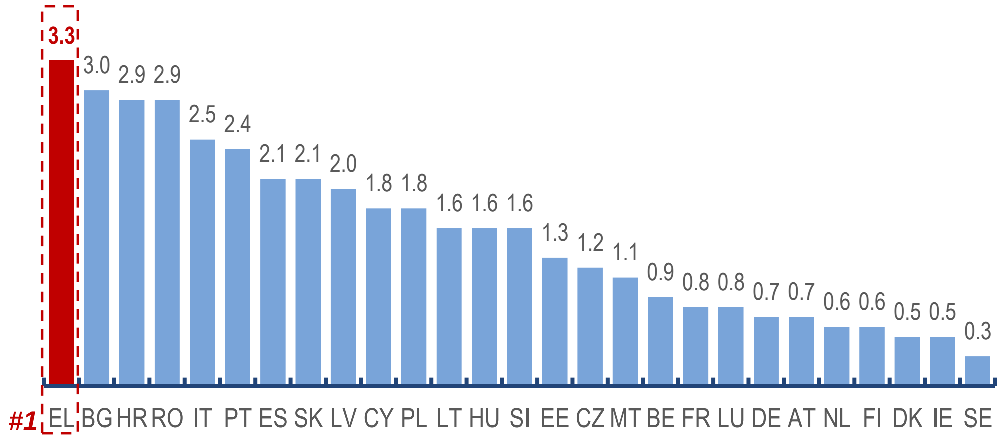
Sources: IMF WEO for 2007-2017; European Commission (Autumn Forecasts 2021 and 2022) for 2018-2021; 2022 Final Draft Budgetary Plan (Nov. 2022) for 2022E and 2023F
Note: General Government perimeter

GREECE'S GROWTH STRATEGY WILL CONTINUE TO BE SUPPORTED BY THE IMPLEMENTATION OF GREECE 2.0

Greece's growth strategy, outlined in the "Greece 2.0" plan, will take advantage of NGEU funds to enhance long-term growth potential and support the economic recovery

1. **"Greece 2.0" provides the framework for channeling the funds available to Greece under the RRF toward the Greek economy and catalyzing private investment, by allocating more than c. €31bn over the next 6 years for the implementation of 207 investments and 124 reforms**
2. **NGEU funds are expected to have the strongest positive impact on growth for Greece, compared to all other Eurozone beneficiaries**
3. **Implementation of Greece's recovery plan is among the fastest in Europe, with early accomplishment of milestones allowing for a faster pace of disbursements**

2 Impact of NGEU on 2026 real GDP *(in % dev. from a no-policy baseline)*



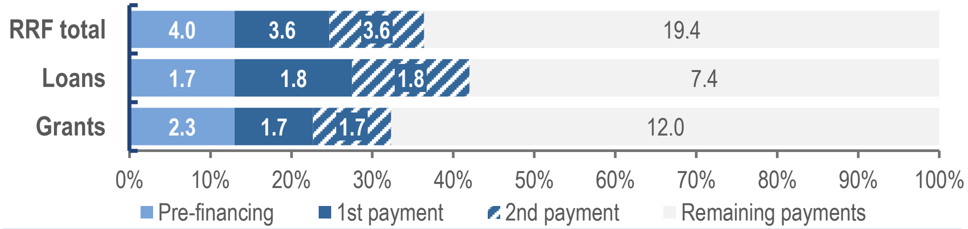
Source: Pfeiffer et al. (July 2021), EC Discussion Paper n°144. Note: Scenario with a six-year spending profile, high productivity

1 Greece 2.0 allocation of funds *(€bn)*

	RRF Allocation (2021-26)	Disbursements *(as of Dec22, in % of total)*	Total Mobilized Investment
Grants	**€18bn**	**€4.0bn** *(22%)*	**€28bn**
Loans	**€13bn**	**€3.5bn** *(27%)*	**€32bn**
Total	**€31bn**	**€7.5bn** *(24%)*	**€60bn**

Sources: EU Commission RRF Scoreboard, Greek Authorities – Greece 2.0 website
Notes: As of 21/12/2022; (1) Economic and Financial Committee

3 RRF disbursements schedule *(in €bn)* and timeline



2021 | **2022** | **… 2026**

2021:
- **July:** Financing Agreement
- **August:** Pre-Financing payment

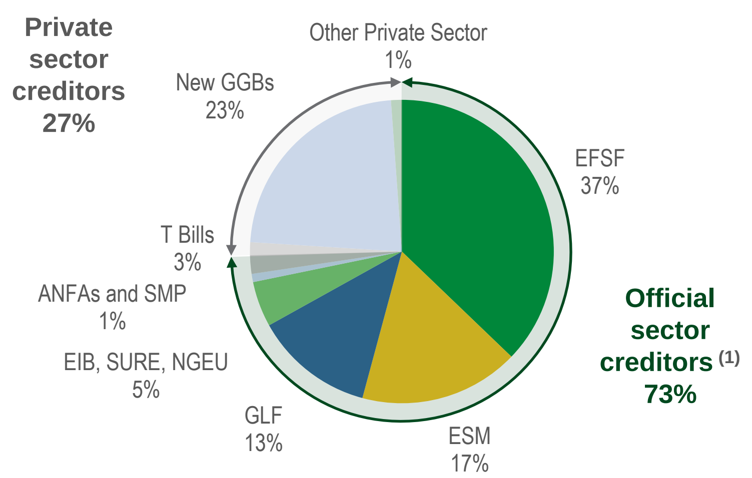
2022:
- **April:** First disbursements (3rd in EU)
- **September**: Early completion of 28 milestones and targets allowed for an early 2nd payment request – endorsed in Nov22 by the EC and submitted to the EFC(1) for final approval

III OVERVIEW OF GREEK PUBLIC DEBT SUSTAINABILITY

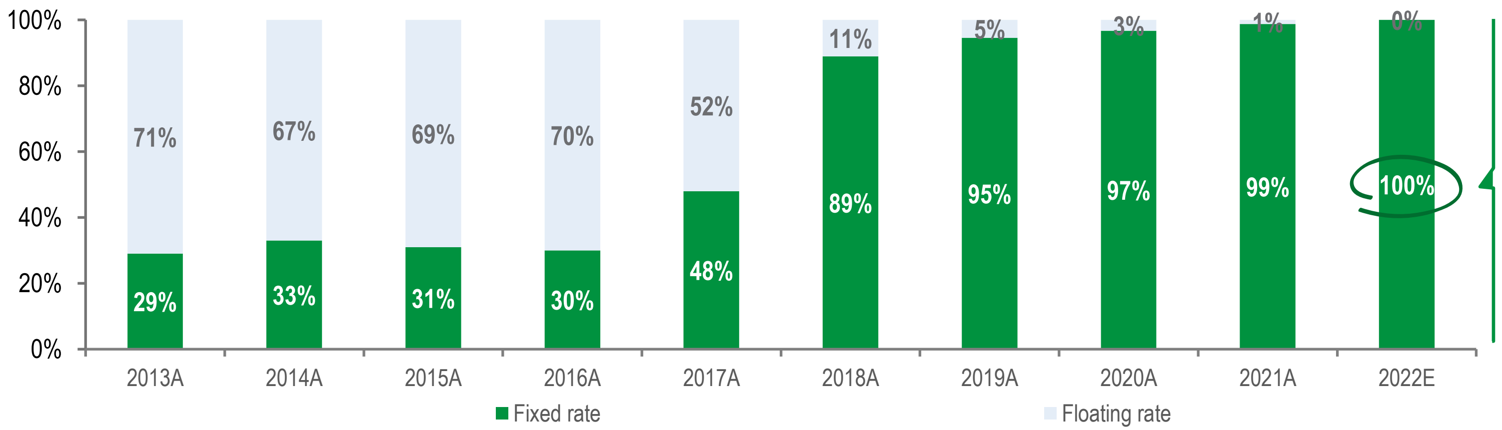
GREECE BENEFITS FROM A FAVOURABLE DEBT STRUCTURE

- **Greece benefits from a favourable debt structure**
  - More than 70% of the debt stock is held by official sector creditors[1], which comes with **long term maturity profile** and **low interest rates**
  - **100% of debt is fixed rate**[2], limiting interest rate risks
- **Furthermore, PDMA's active debt management has allowed Greece's debt portfolio to be temporarily over-hedged against interest risk, which will contribute to further contain funding costs going forward**

Debt breakdown by type of instruments, as of YE 2022E



Debt breakdown by coupon rate type[2]



- Greece's public debt portfolio is in fact temporarily **over-hedged** against interest rate risk (c. 104% hedged)
- The corresponding (locked-in) fixed interest rates are expected to remain **well below market rates**, **which will reduce Greece's net funding costs for the coming years**

Source: PDMA

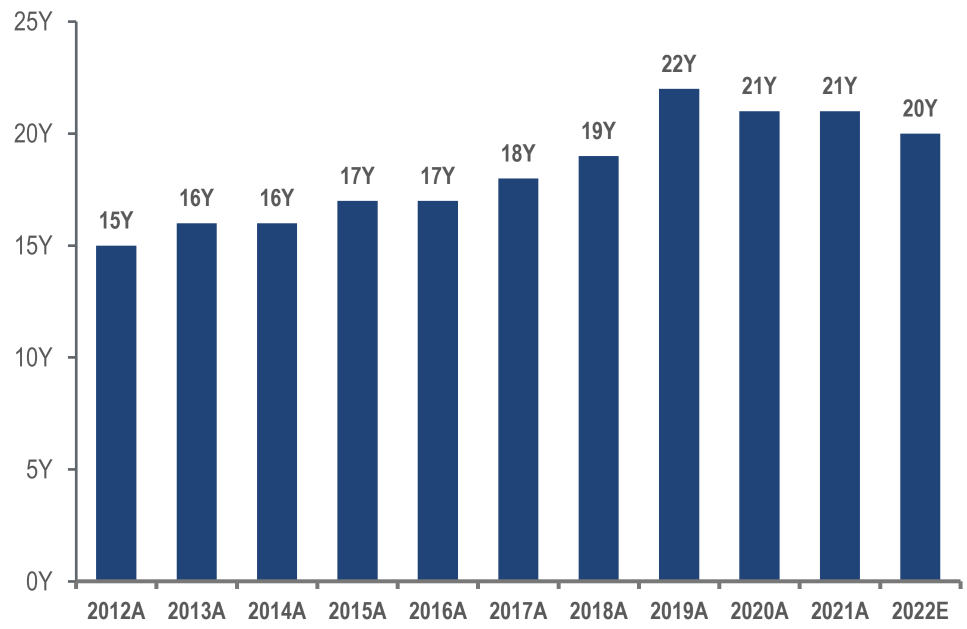
Notes: (1) Excludes Eurosystem holding of GGBs, purchased on the secondary markets through the PEPP; (2) Fixed/floating ratio is calculated taking into account: i) interest rate swap transactions, ii) the use of funding instruments by ESM regarding the loans that have been granted to the Hellenic Republic and iii) the incorporation of the risk metrics of EFSF's liability portfolio into the Greek debt portfolio

GREEK PUBLIC DEBT HAS AN EXCEPTIONALLY LONG MATURITY

The long weighted average maturity of the Greek debt limits refinancing risks

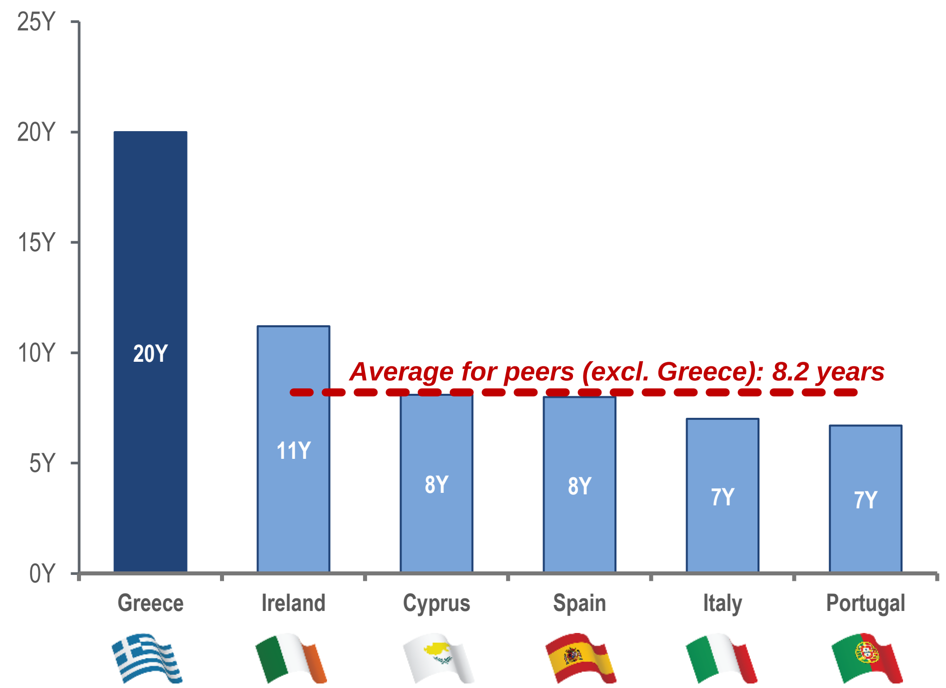
- **The weighted average maturity of the Greek public debt stock remains very high, at 20-Y**
  - Greek public debt weighted average maturity stands largely above that of Eurozone peers (20-Y vs 8-Y on average for a selected group of peers)

Weighted average maturity of General Government public debt



Source: PDMA

Greece and EZ peers' debt weighted average maturity *(2022E)*



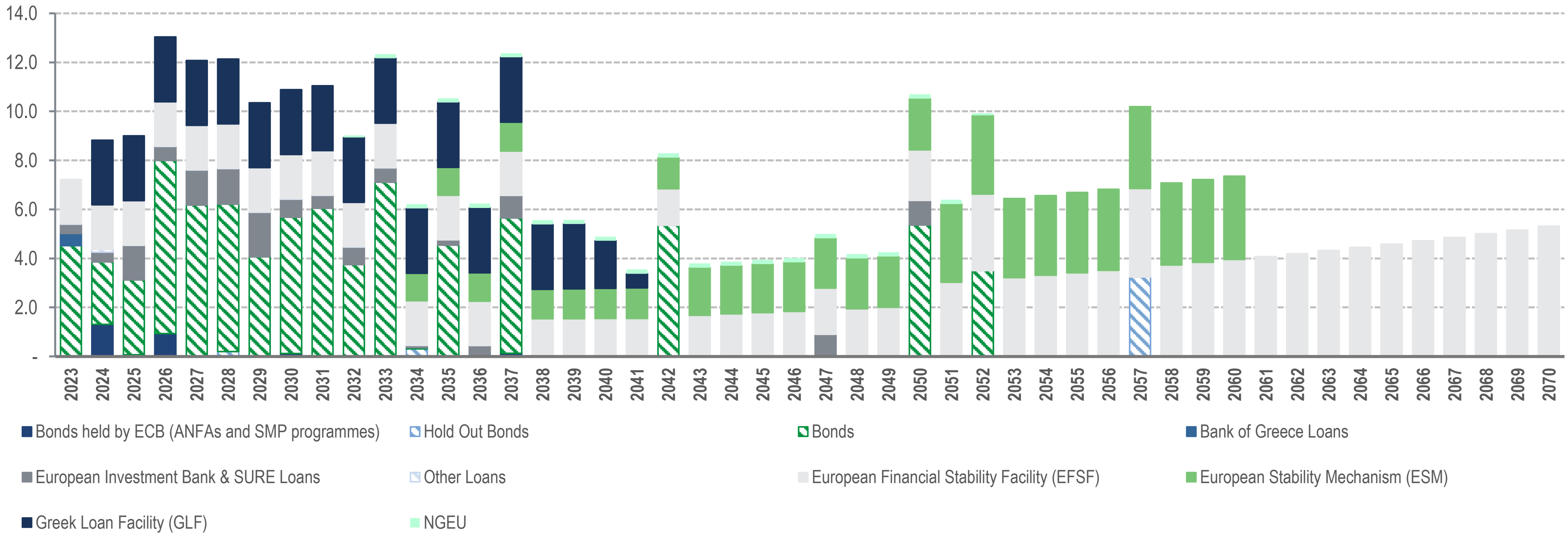
Sources: PDMA, IMF Fiscal Monitor October 2022

GREECE MATURITY PROFILE STRONGLY LIMITS REFINANCING RISKS

Greece's favourable debt repayment profile strongly limits public debt refinancing risks in short, medium and long terms

- **Debt amortization is evenly distributed over the medium-term so that the debt service will remain at or below €13bn each year**
- **At more than €30bn, the cash buffer is also a strong mitigant to any refinancing risks**

Maturity profile of Greece public debt as of December 2022(1) *(€bn)*

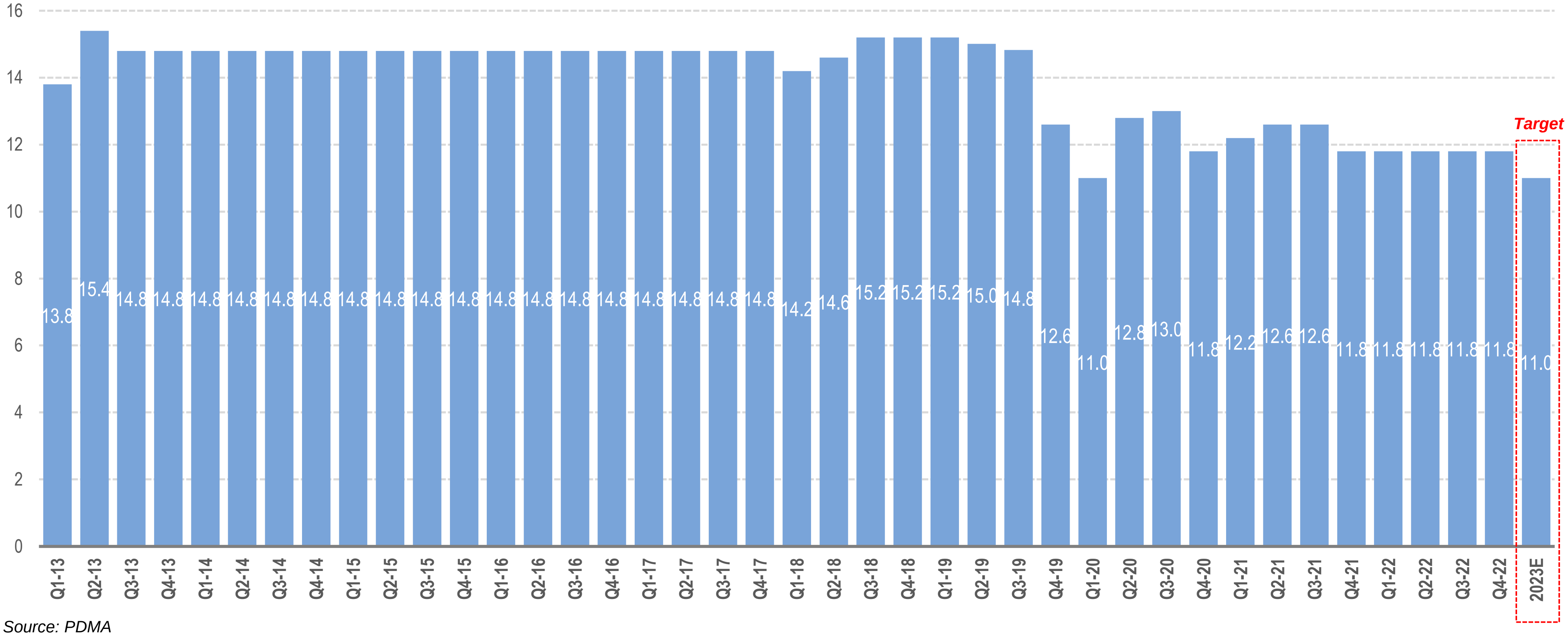


Source: PDMA
Note: (1) Maturity profile excludes T-bills and REPOs

THE STOCK OF GREEK T-BILLS IS SET TO DECLINE

- **The current stock of T-bills of the Hellenic Republic is estimated at €11.8bn at the end of 2022**
- **The stock of T-bills is expected to be reduced by c. €0.8bn in the course of 2023.**

Evolution of the stock of Greek T-bills by quarter *(end of period, €bn)*



Source: PDMA
Note: The T-bills' stock is calculated at the end of each quarter

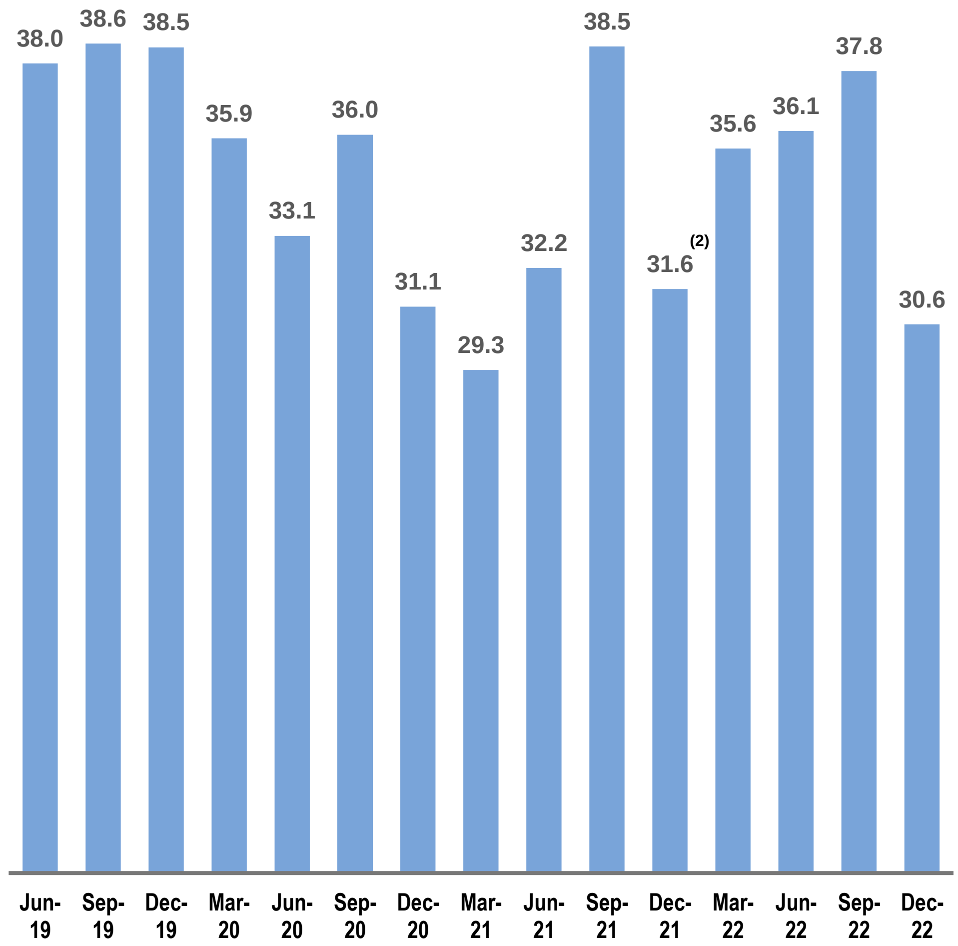
THE SUBSTANTIAL CASH RESERVES ARE ANOTHER BACKSTOP AGAINST REFINANCING RISK

Greece's cash reserves continue to exceed €30bn[(1)], i.e. over 3 years of debt maturities

Key considerations

- **Greece benefits from important cash reserves, which it has progressively accumulated over the past years thanks to:**
  - New GGBs' issuances over 2017-22
  - Fiscal surpluses accumulated prior to the pandemic
  - A very favourable debt amortization profile
- **Revenue collection overperformance in 2022 and proactive debt management allowed to maintain cash reserves above €30bn as of the end of 2022 despite higher financing needs and heightened market volatility**
- **These sizeable cash reserves cover more than 3 years of gross financing needs of the Republic, providing a significant buffer against any refinancing and interest rate risks** over the medium-term

Greece's cash reserves *(€bn)[(1)]*



Source: PDMA

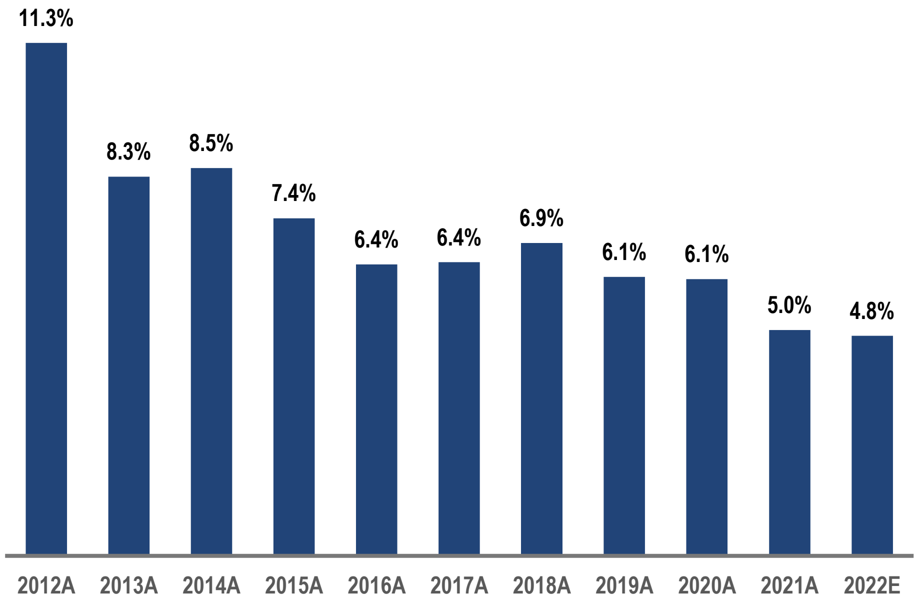
Notes: (1) Including general government entities' deposits in commercial banks; (2) Including from Dec21 onward Greece's 2021 SDR allocation

THE AFFORDABILITY OF GREEK PUBLIC DEBT IS FURTHER IMPROVING

Sustained low financing costs for Greece continue to materialize into a declining interest-to-revenue ratio

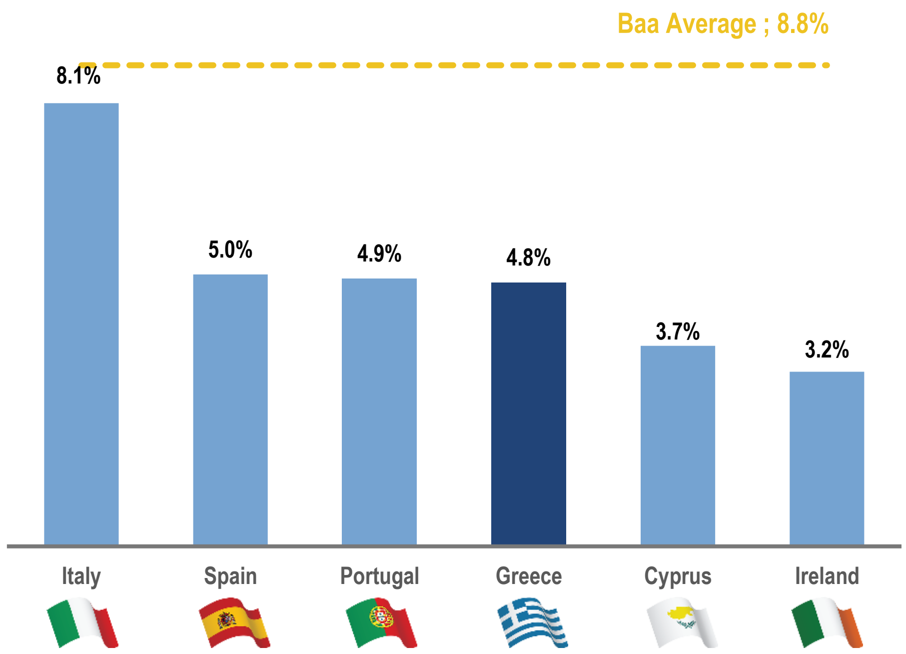
- **Interest debt service as a share of total general government revenues maintained its downward trend to reach 4.8% in 2022, on the back of exceptional revenue outturn this year and contained funding costs, thanks to Greece favourable debt structure**
- **As a result, despite having the highest debt-to-GDP ratio in the Eurozone, Greece's interest bill remains largely in line with its peers' (e.g. Portugal) and significantly below the average of Baa-rated sovereigns'**

Evolution of Greece interest payment to revenues



Source: European Commission (AMECO database)

Greece & EZ peers' interest payment to revenues *(2022E)*

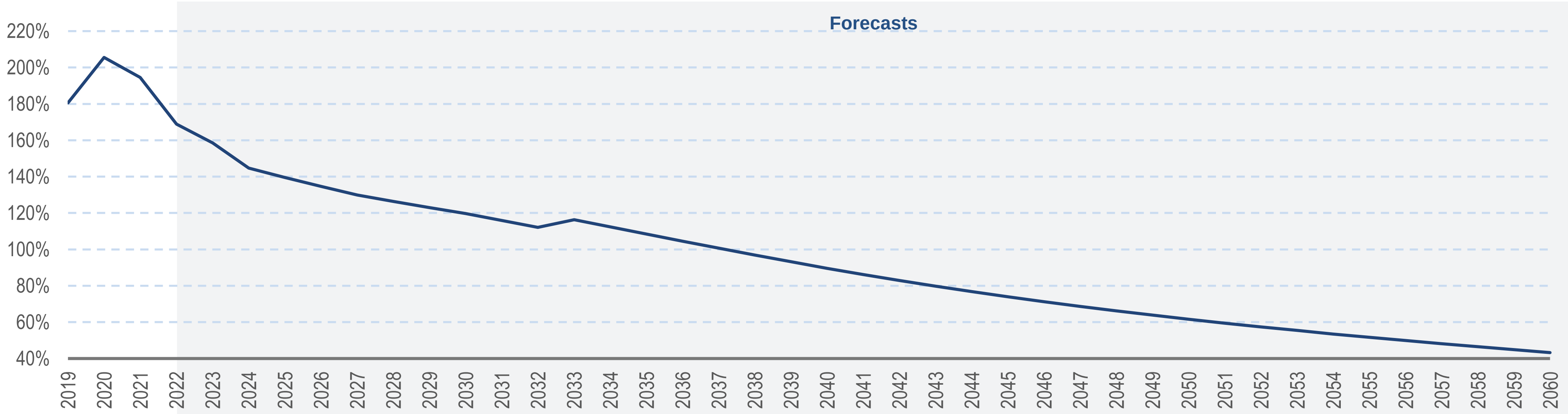


Sources: European Commission (AMECO database), Moody's for Baa average

GREEK PUBLIC DEBT-TO-GDP RATIO REMAINS ON A FIRM DOWNWARD PATH

After a short-term deterioration due to the COVID-19 impact, the Greek debt-to-GDP ratio is expected to steadily decrease over the coming years, supported by strong nominal growth, sustained fiscal discipline and a proactive debt management strategy

Public debt to GDP forecast *(% of GDP)*



	2023	2024	2025	2026	2027 onwards
Real GDP growth rate	1.8%	2.0%	1.2%	1.2%	1.1% to 1.5%(1)
Inflation (GDP deflator)	4.8%	2.3%	2.4%	2.4%	2.4% to 2.1%(2)
Average effective interest rate *(medium- & long-term debt)*	1.2%	1.2%	1.2%	1.2%	2.7% on average(3)
Primary surplus(4) *(% of GDP)*	0.7%	1.8%	1.6%	1.7%	2.1% on average

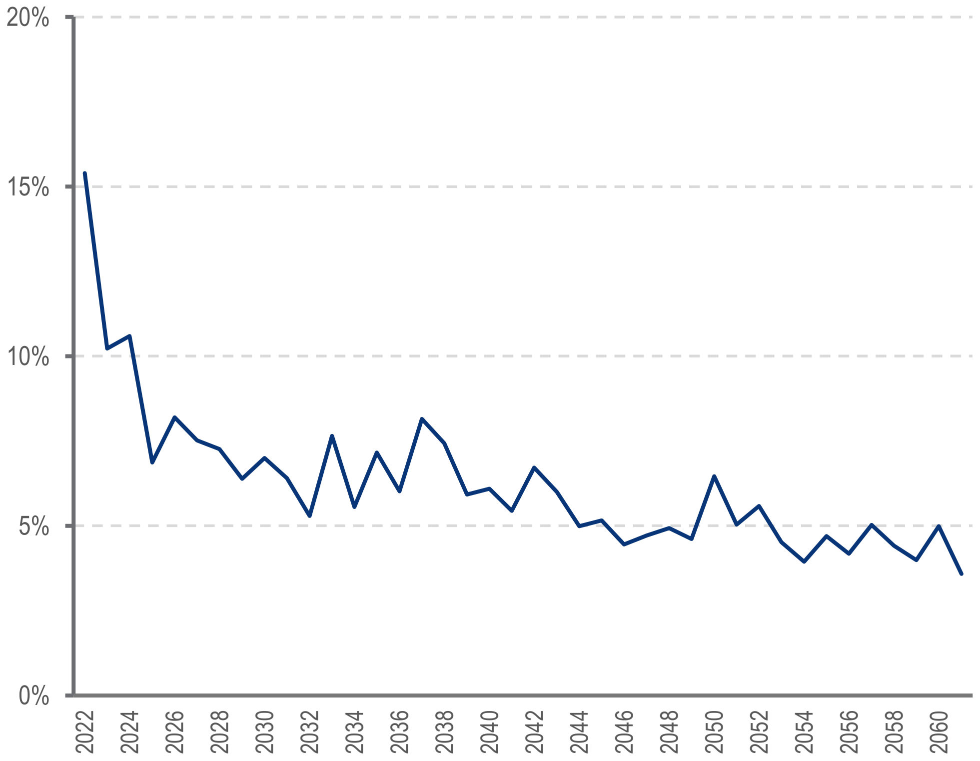
Sources: European Commission, 2022 Final Draft Budgetary Plan, Ministry of Finance, PDMA

Notes: The present analysis is mainly based on the baseline assumptions of the European Institutions, and includes conservative assumptions with respect to contingent liabilities (assumed crystallization of c. 43% of the total stock of contingent liabilities over 2023-2030, on average) ; (1) Real GDP growth decreasing from 1.1% in 2027 to 0.7% in 2030, then increasing to 1.7% in 2040 and finally converging to 1.5% in 2060; (2) GDP deflator decreasing from 2.4% in 2027 to 2.0% in 2050, and then remaining broadly constant from 2050 onwards:; (3) Average effective interest rate for the period 2027-2060; (4) From 2024 onward, each year's primary surplus is calibrated so as to compensate the current year's interest bill, i.e. achieving overall fiscal balance

GREECE GROSS FINANCING NEEDS ARE EXPECTED TO REMAIN LOW AS COMPARED TO EUROZONE PEERS

Greece gross financing needs remained around 15% of GDP in 2022, close to Eurozone peers' average, and will remain well below 15% going forward

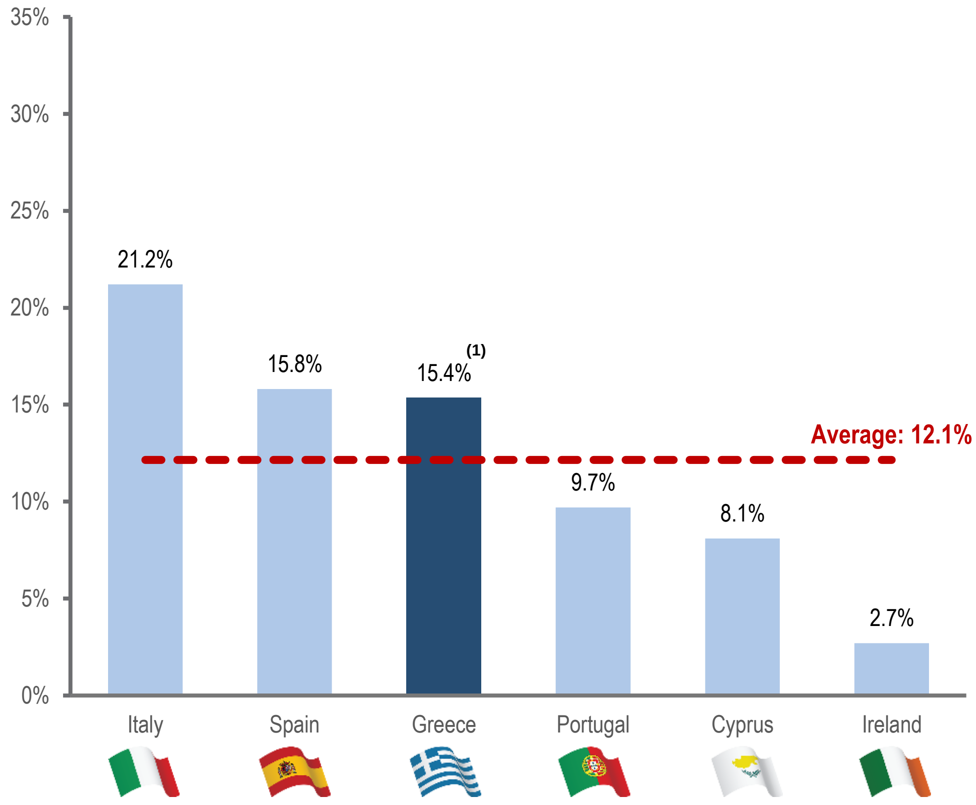
Evolution of Greece gross financing needs[1] *(% of GDP)*



Source: PDMA

Note: (1) Including T-bills and excluding Repos

Greece & EZ peers' gross financing needs *(2022E, % of GDP)*



Sources: PDMA for Greece, IMF Fiscal Monitor

Note: (1) Including T-bills and excluding Repos

IV FOCUS ON FINANCING NEEDS AND SOURCES FOR 2023

OVERVIEW OF PDMA DEBT & FUNDING STRATEGY

PDMA current debt and funding strategy is focused on reaching the following main objectives:

1 Enhance market access

- **Improve a tradable and liquid yield curve**
- **Enhance the investor base towards more real money players**
- **Maintain regular market operations**

2 Contain funding costs

- **Bring the credit spread of the GGB curve in line with peers**

3 Contain debt-associated risks

- **Limit interest rate and FX risks**
- **Limit refinancing risks**

4 Manage liquidity (cash reserves of both the Greek State and the General Government Entities)

TOWARDS THE ISSUANCE OF A GREEN GREEK GOVERNMENT BOND

Greece contemplates the issuance of an inaugural Green GGB in 2023, to (i) support the implementation of its sustainability agenda and (ii) enhance PDMA's funding strategy

i Supporting the roll-out of Greece sustainability agenda

- **Greece is committed to reducing greenhouse gas emissions by 55% by 2030 and achieving net-zero by 2050, as outlined in the May 2022 Climate Law**
- **The implementation of Greece' sustainability strategy involves public investments that can be financed through the issuance of Green Bonds, as presented by the Minister of Finance at the UN's COP-26 (November 2021)**

ii Enhancing PDMA's funding strategy

By issuing Greece's first Green sovereign bond, PDMA intends to:

✓ **Align the State's financial policy with national sustainability targets,** by further evidencing commitment to its sustainability agenda, and by facilitating the monitoring of progresses made under Greece's ESG strategy (through regular reporting)

✓ **Strengthen Greece's investor base,** by addressing institutional investors' rising ESG standards, and by reaching out to new types of investors

✓ **Stand at the forefront of Eurozone sovereign issuers,** by joining the few Eurozone Member States already present on the sovereign Green bond market, and by anticipating the growing impetus of Credit Rating Agencies for environment-related assessment criteria

Key features of the contemplated Green GGB issuance

Format	**Green GGB**	**Currency**	**EUR**
Timing of issuance(1)	**H2 2023**	**Size**(1)	**Benchmark size**
Maturity(1)	**Medium to long-term** *(complementary to the conventional GGB yield curve)*	**Framework**	**Green Bond Framework** *(under development, in line with EU and international best standards)*

Note: (1) Subject to market conditions

FOCUS ON GREECE'S 2023 FINANCING NEEDS AND SOURCES

PDMA funding strategy for year 2023 will focus on the continuous presence in the international debt markets, accompanied by the reduction in debt-to-GDP ratio, proactive management of the debt portfolio and the preservation of a significant cash buffer

Overview of Greece's 2023 financing needs and sources *(€bn)*

	Baseline scenario
2023 Financing Needs	
Medium- and long- term debt amortization	7.2
Interests on debt (incl. interest rate swaps)	4.7
Primary deficit / (surplus) to finance	(1.7)
Early repayments (T-bill stock reduction, official sector debt, etc.)	0.8
Other cash requirements	4.5
Total	**15.4**
2023 Financing Sources	
Medium- and long- term debt issuance (new money transactions)	7.0 (1)
Other financing sources (RRF, EIB, CEB, etc.)	4.2
Privatization receipts	2.0
Change in cash reserves, decrease / (increase)	2.2
Total	**15.4**
Change in public debt, increase / (decrease)	**0.8**

Objective to keep the debt stock almost constant in euro terms

Note: (1) Excluding 2023 potential Green Bond issuance