Greece: Debt sustainability, liquidity, and cash flow analysis

1. Fiscal flows

$$S_P - C = \Delta D_G - (\Delta B_D + \Delta B_E) - \Delta GEA$$

where $\Delta GEA = \Delta PRIV + \Delta SMP$*... rearrange*

$$(S_P - C) + \Delta B_D = \Delta D_G - (\Delta B_E + \Delta GEA)$$

2. Balance of payments flows

$$CA = \Delta NFA_{MFI} + \Delta NFA_{OTH} - (\Delta B_E + \Delta GEA) + \Delta APP + (\Delta T_A - \Delta T_L)$$

where $\Delta FA_{BoG} = \Delta APP$ *... rearrange...*

$$(\Delta T_A - \Delta T_L) + (\Delta APP - (\Delta B_E + \Delta GEA)) = TB + PI + SI - \Delta NFA$$

3. Bank of Greece flows (change in balance sheet)

$$\Delta MRO + \Delta APP + \Delta T_A = \Delta D_G + \Delta D_{MFI} + \Delta T_L$$

Rearrange and subtract $\Delta B_E + \Delta GEA$ *from both sides*

$$(\Delta T_A - \Delta T_L) + (\Delta APP - (\Delta B_E + \Delta GEA))$$
$$= \Delta D_{MFI} - \Delta MRO + (\Delta D_G - (\Delta B_E + \Delta GEA))$$

Combining our three relations allows us to forecast the accumulation of cash and evolution of T2 balance

$$(\Delta T_A - \Delta T_L) + (\Delta APP - (\Delta B_E + \Delta GEA)) =$$

$$\Delta D_{MFI} - \Delta MRO + (\Delta D_G - (\Delta B_E + \Delta GEA)) =$$

$$TB + PI' - C_E + SI - \Delta NFA$$

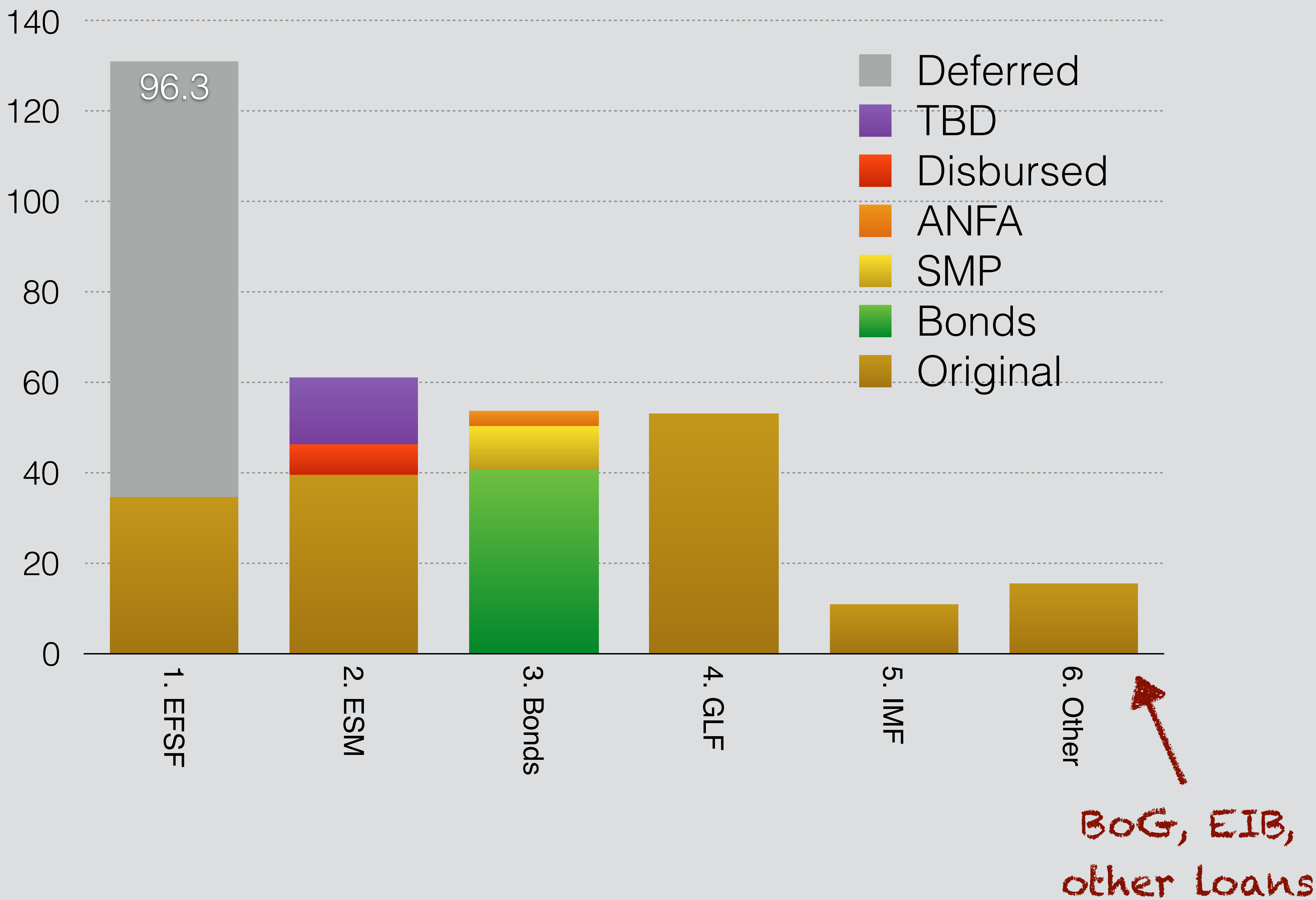
$$\Delta D_G - (\Delta B_E + \Delta GEA) = S_P - (C_D + C_E) + \Delta B_D$$

Total debt (PDMA website)

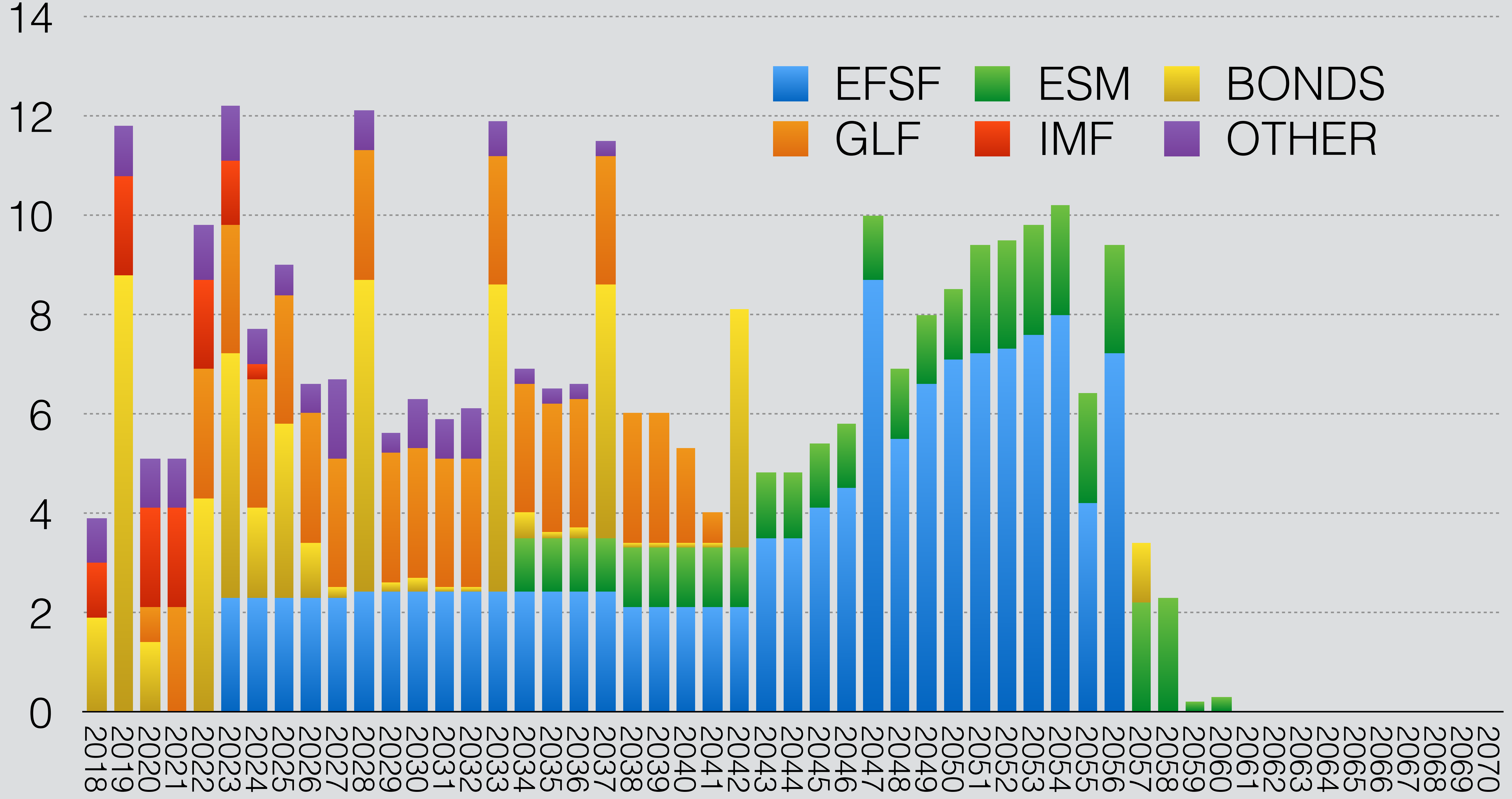
Greece: Distribution of public debt of €339bn by creditor (from PDMA website, March 2018)

Updated for recent and expected flows…

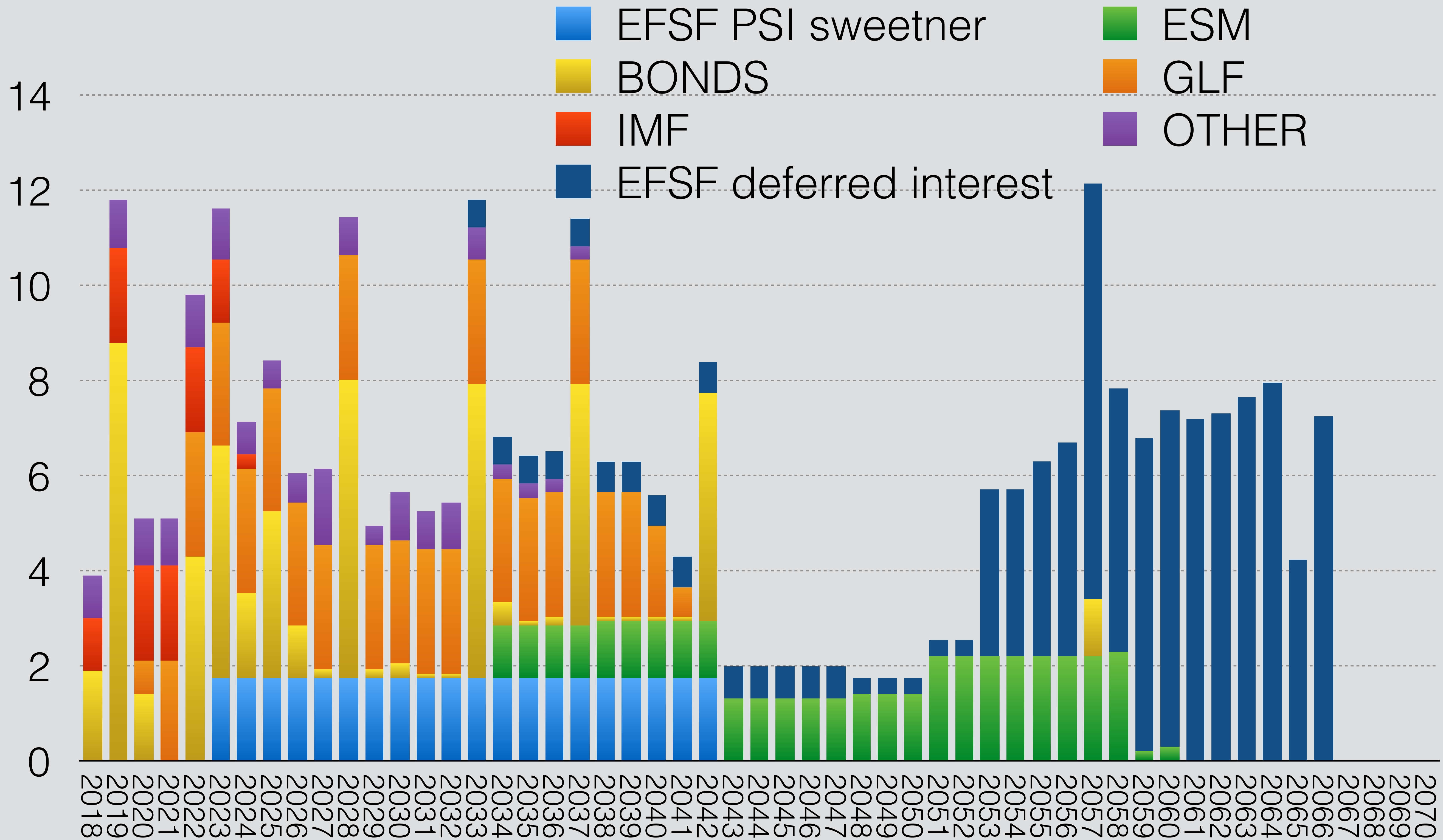
Greece: Debt (ex. T-bills and repos) plus new and expected disbursements (PDMA website updated through June 2018)



Greece: Debt (ex. T-bills and repos) amortisation schedule <u>not updated for latest EFSF maturity extension</u> (source: PDMA March, 2018)



Greece: Debt (ex. T-bills and repos) amortisation schedule updated for latest EFSF maturity extension (source: PDMA March, 2018 updated)



Bonded debt (and PSPP)

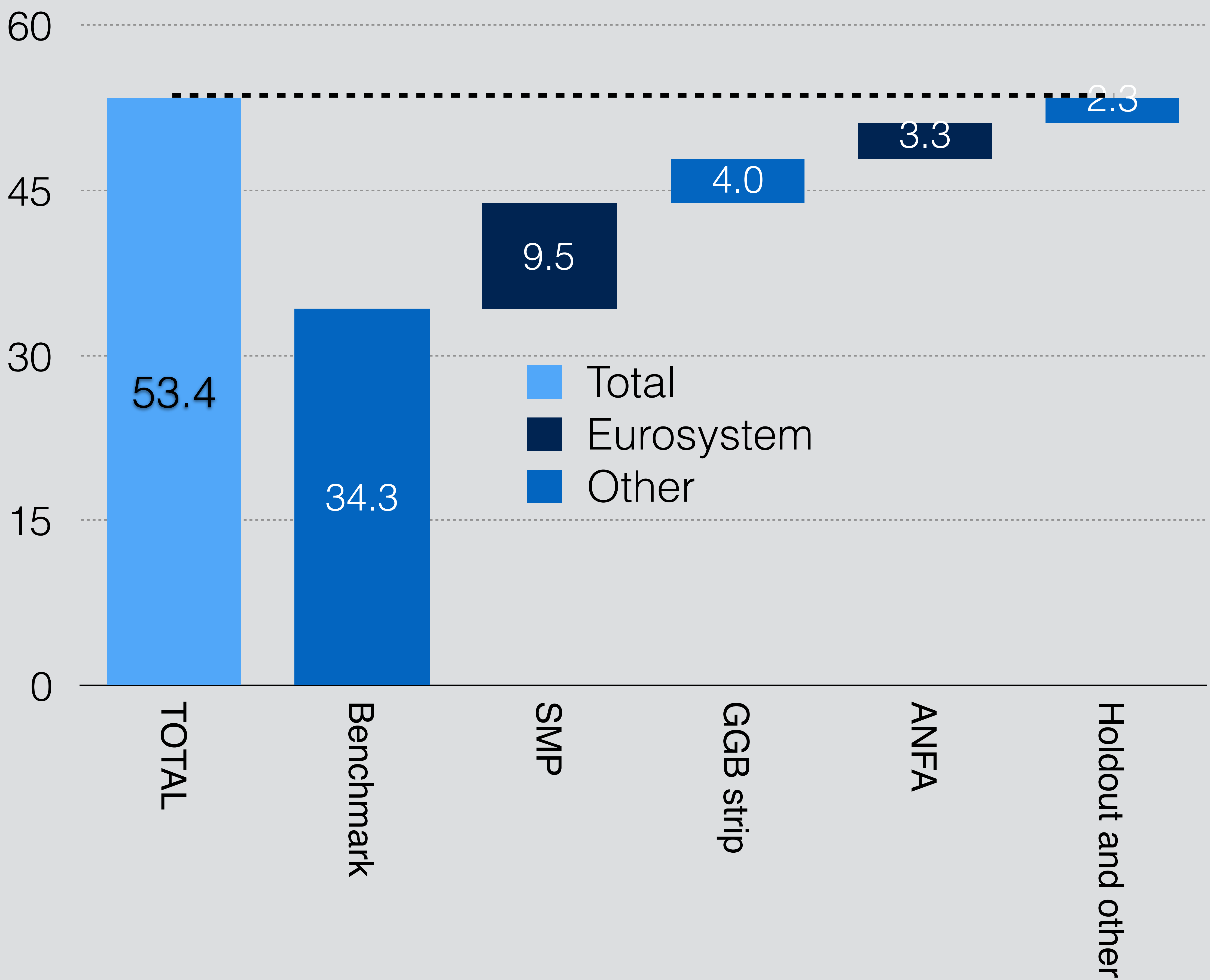
PSPP issue and issuer limit

- **Issue limit**: 33% issue share limit from Sept. 2015, subject to verification this does not cause blocking CAC minority (originally set at 25% at beginning of PSPP.)

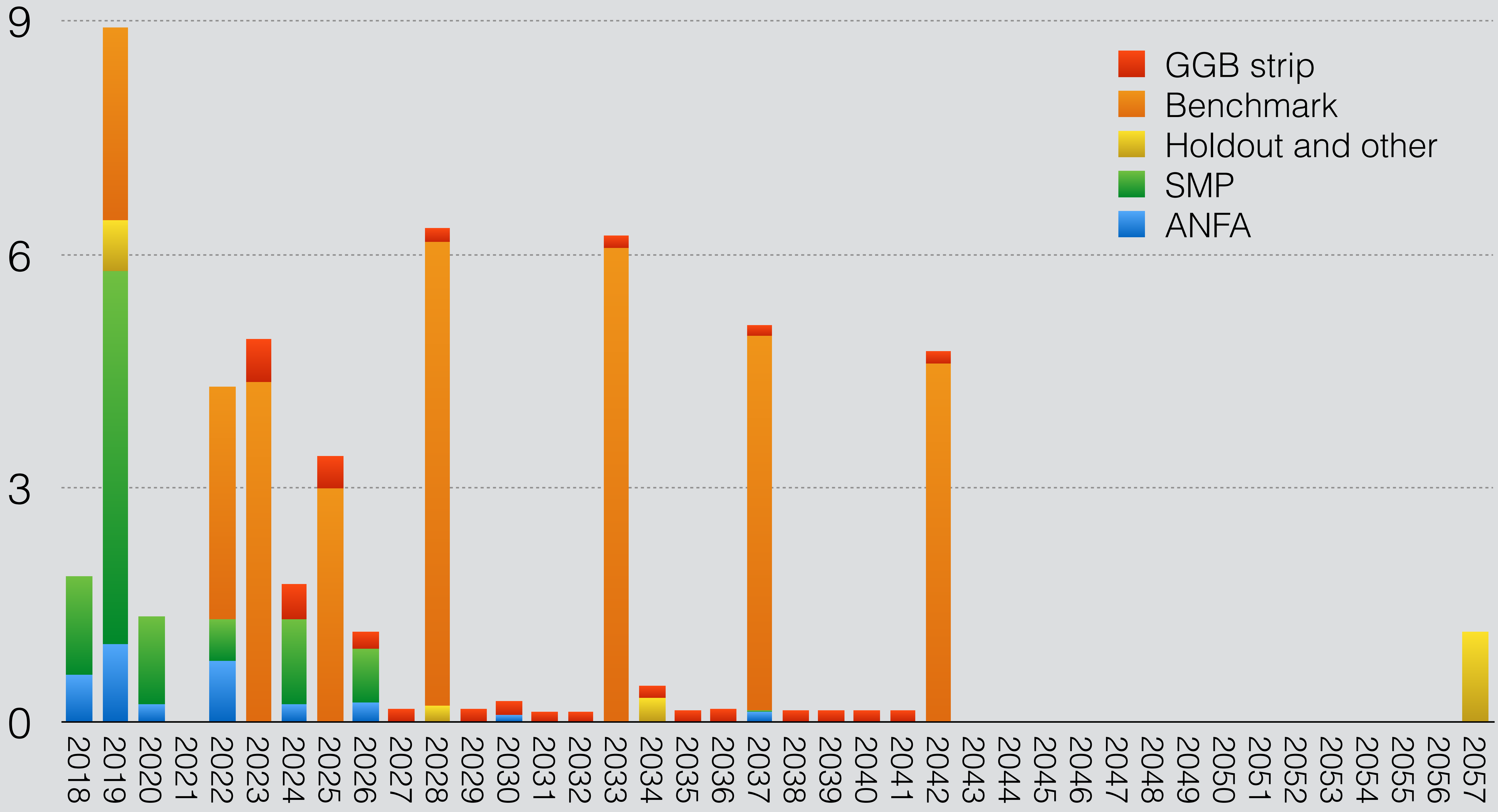
- **Issuer limit**: *"The **issuer limit** refers to the maximum share of an issuer's outstanding securities that the ECB is prepared to buy. The issuer **limit of 33%** is a means to safeguard market functioning and price formation as well as to mitigate the risk of the ECB becoming a dominant creditor of euro area governments. To this end, the 33% limit is applied to the universe of eligible assets in the 1 to 30-year range of residual maturity."*

- *"Both limits also cover existing Eurosystem holdings of PSPP-eligible bonds in the context of the Securities Market Programme and any other portfolios owned by Eurosystem central banks."*

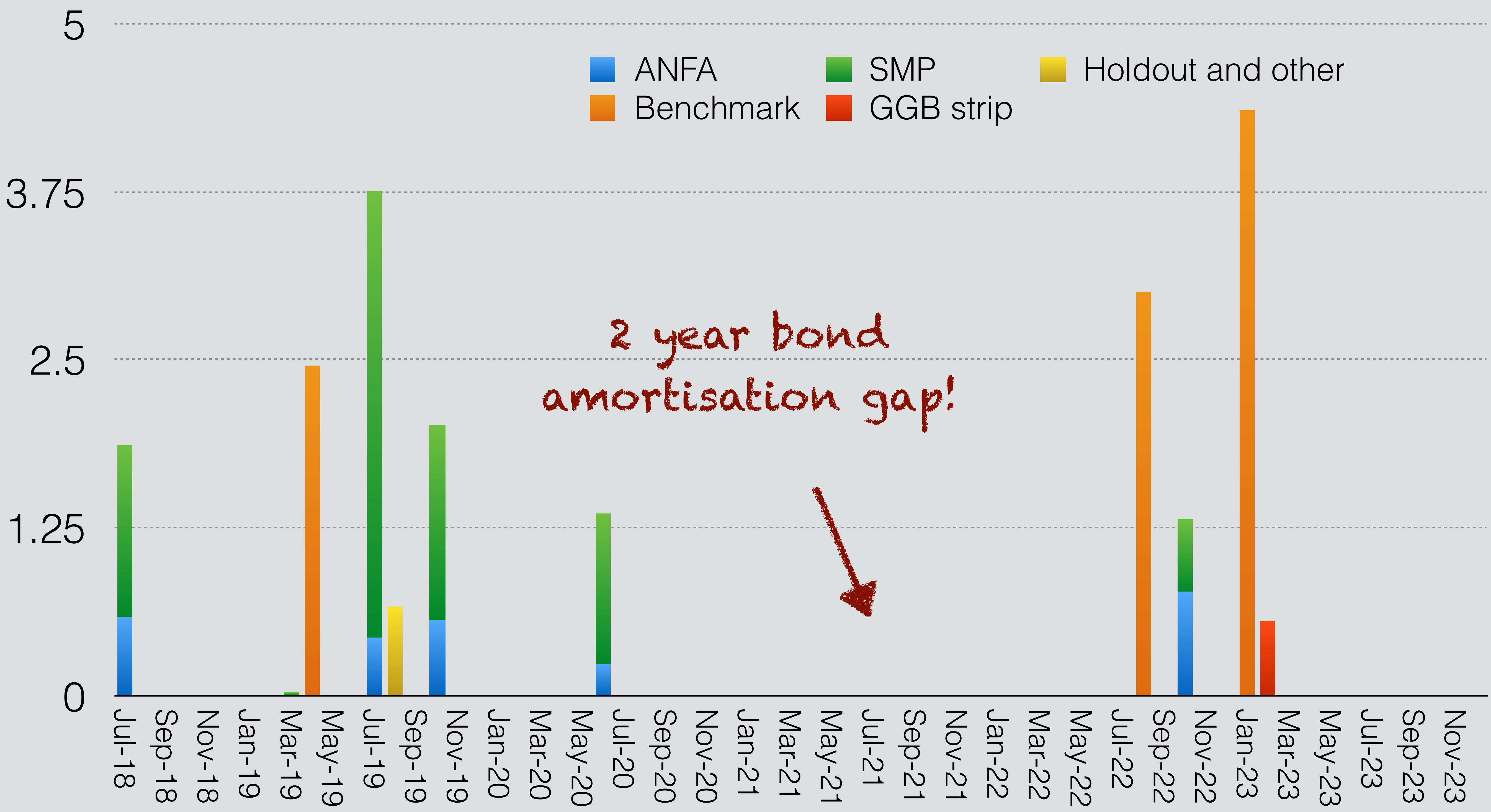
Greece: Total bonded debt (end-June, 2018)



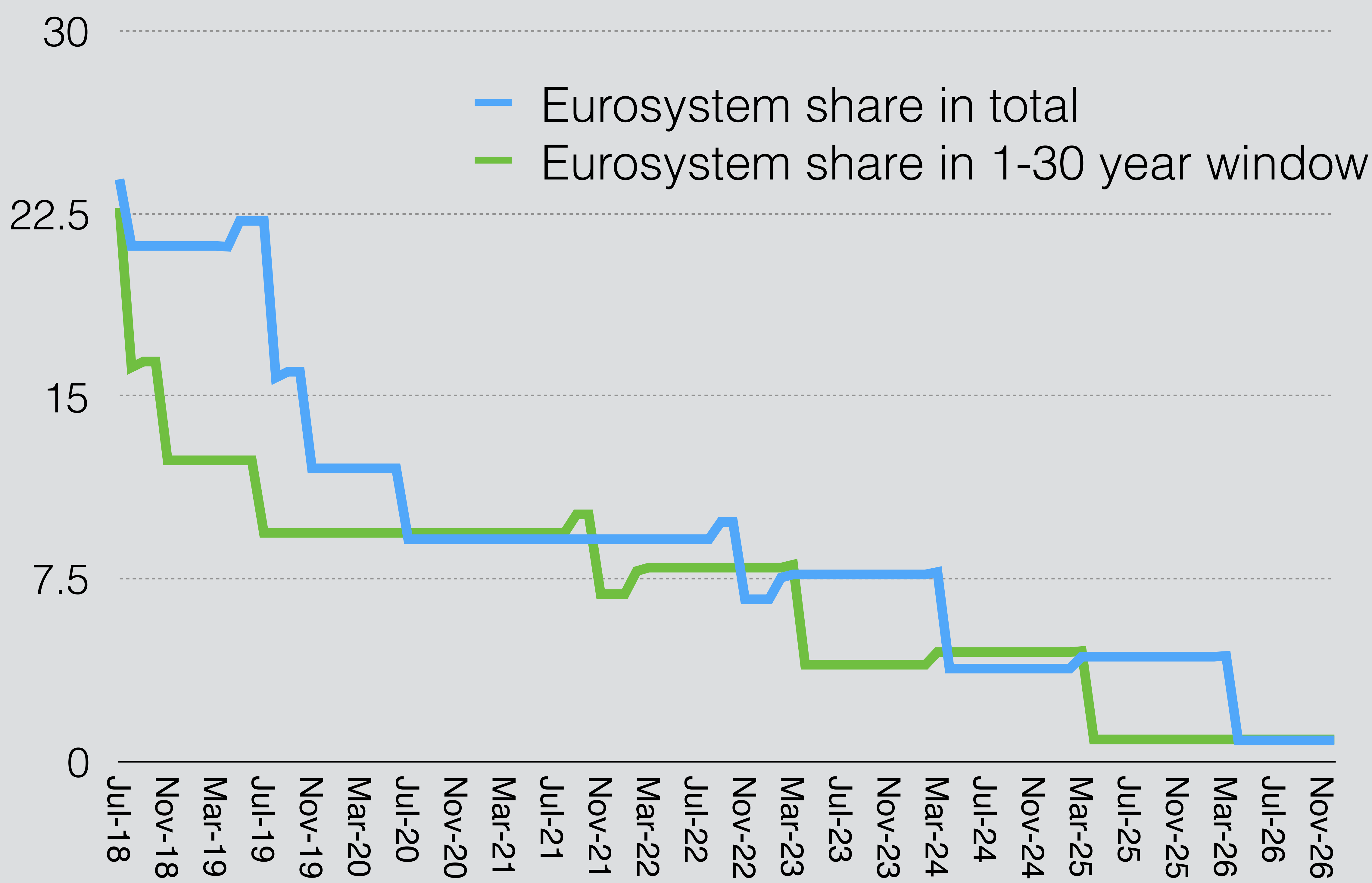
Greece: 40 year existing bond amortisation schedule (€ billions)



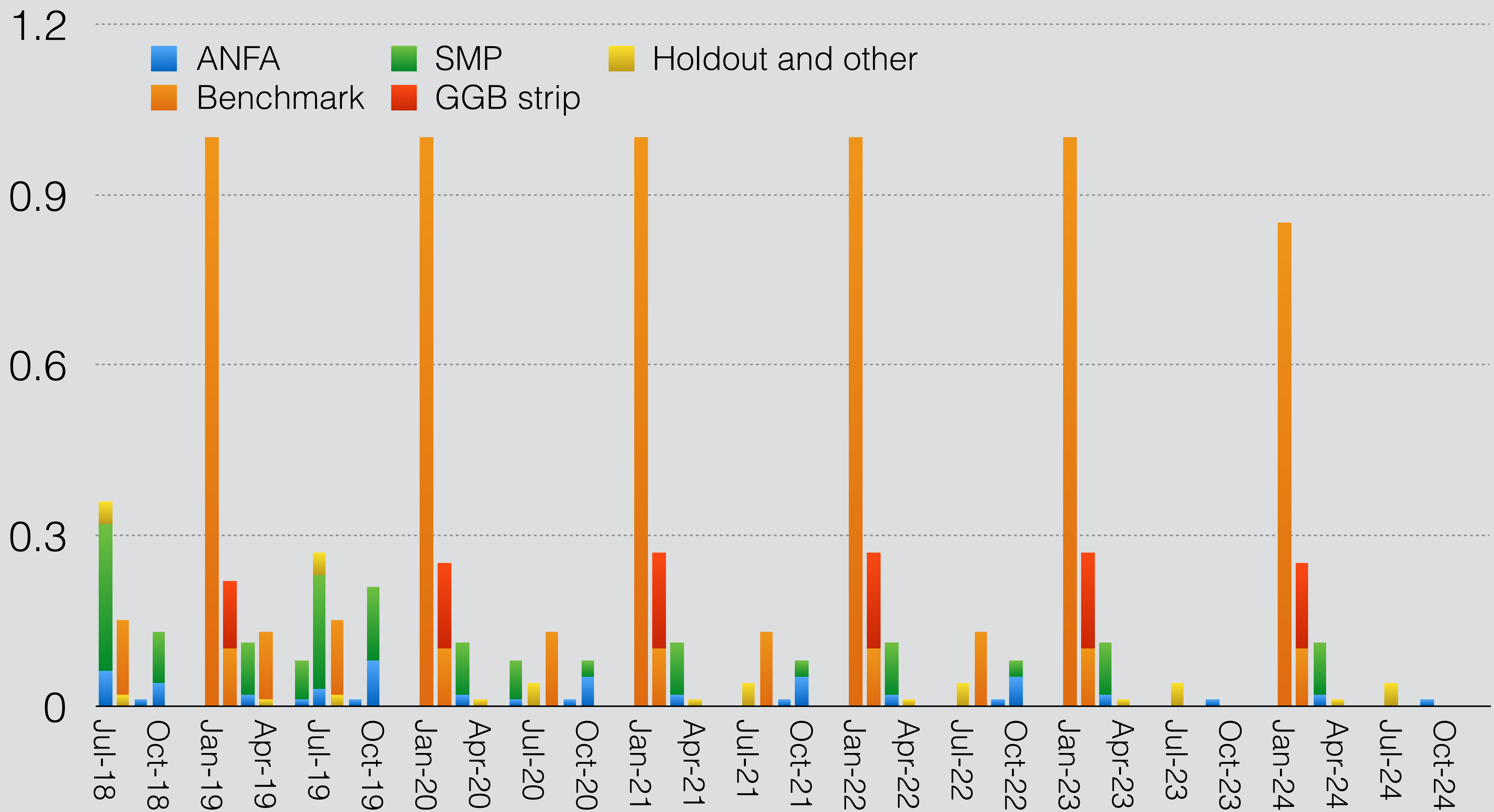
Greece: 5 1/2 year existing bond monthly amortisation schedule (€ billions)



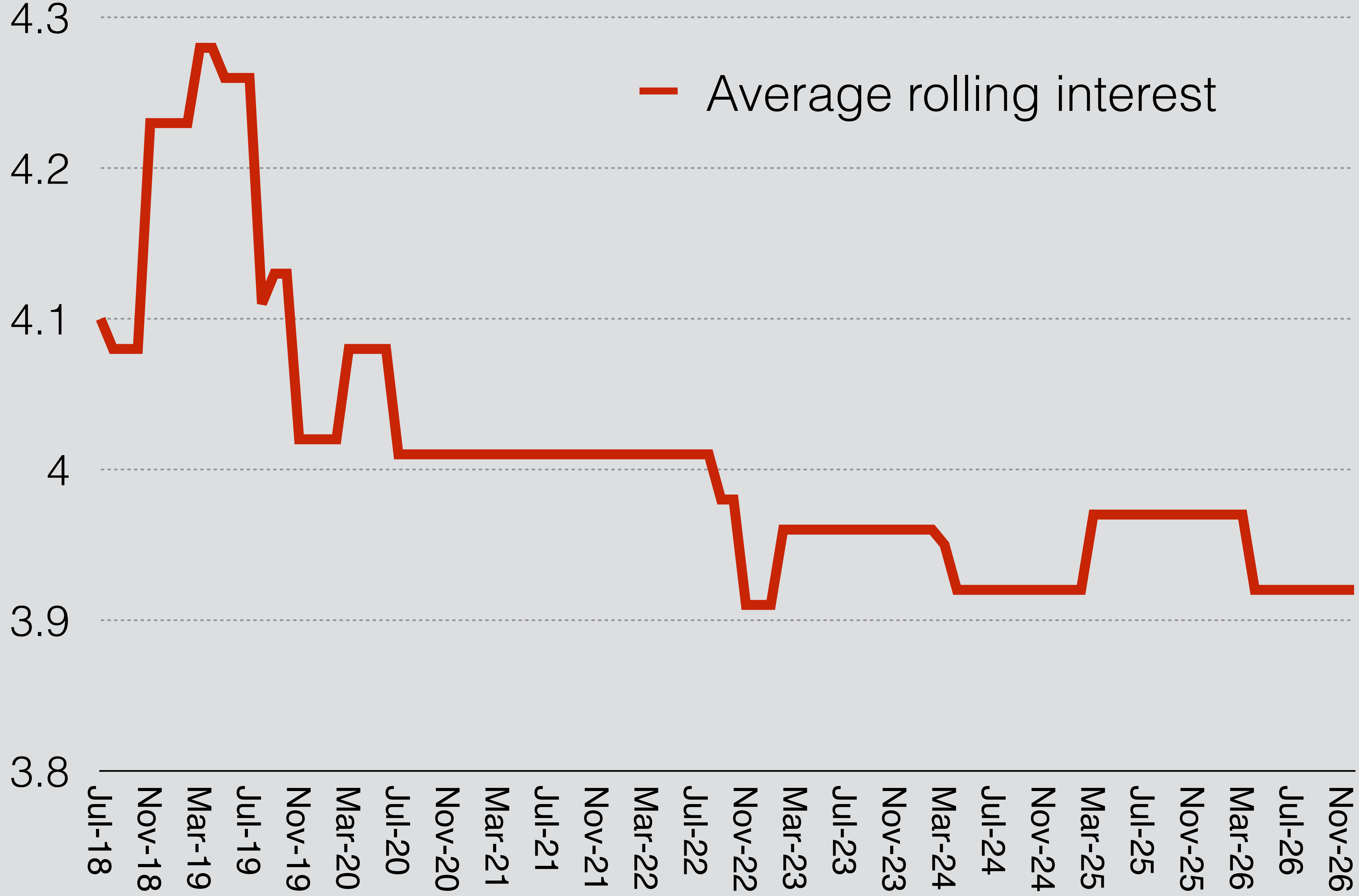
Greece: Eurosystem rolling share in bonded debt (%)



Greece: 5 Monthly coupon schedule (€ billions)



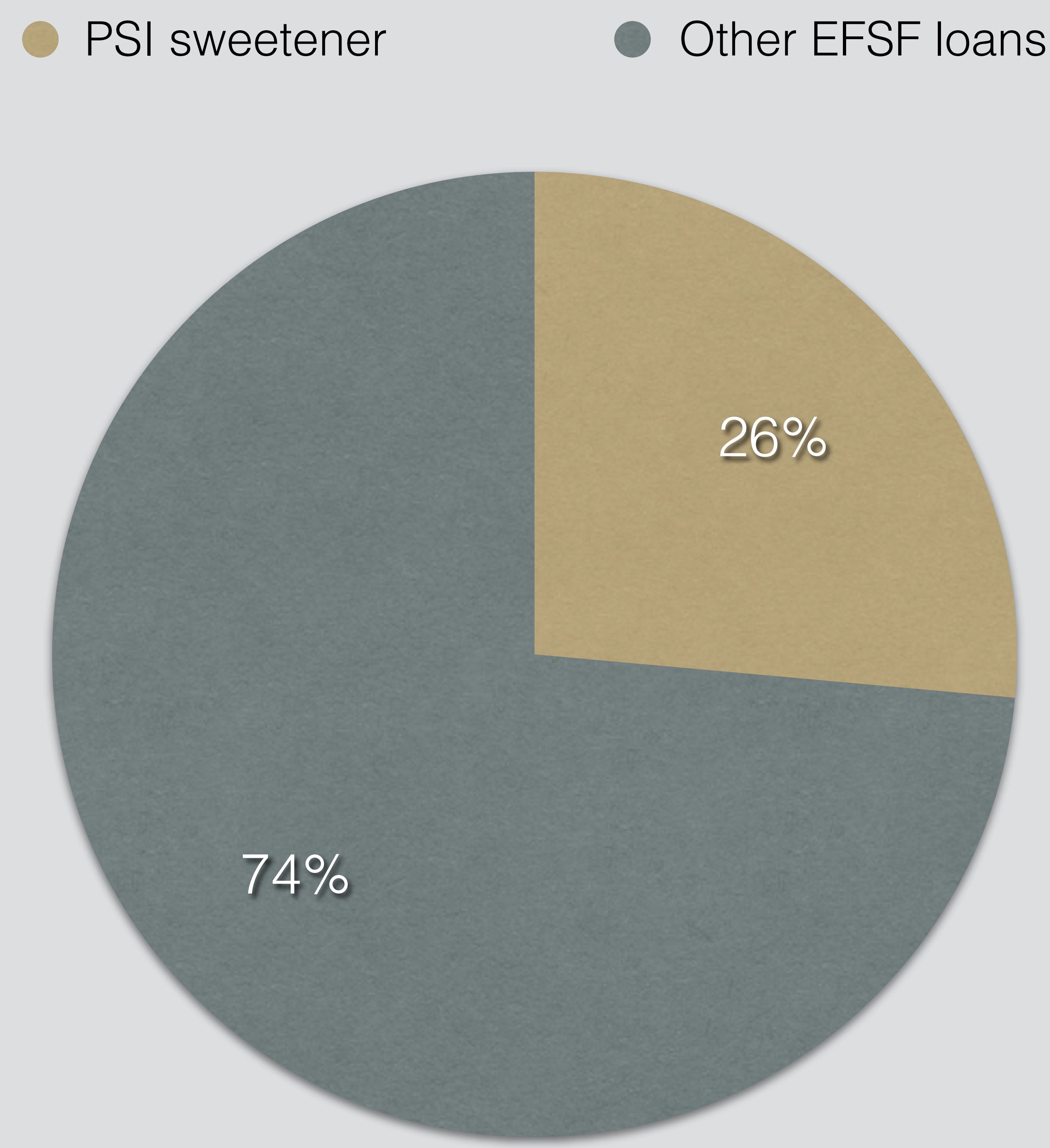
Greece: Rolling 12M average interest on bonds (%)



EFSF/ESM/GLF

Greece: EFSF loans from the 2nd program (€ billions)

€130.9bn of EFSF loans outstanding, divided into two groups: €34.6bn related to the PSI sweetener (i.e., li need to GGB strip), and remaining €96.3bn subject to maturity extensions and interest deferral.



The Greek Loan Facility (GLF)

- GLF are the bilateral loans made by Member States at the time of the 1st Program (i.e., before EFSF and then ESM were brought to life);

- Initial maturity 5 years (in line with IMF) and penalty rate funding (cost of funding +300bps for 3 years and +400bps beyond 3 years);

- Terms progressively relaxed:
  - March 2011, mark-up reduced 100bps;
  - February 2012, €group lowered interest rate to 3M Euribor plus 150bps retroactively from 15 June 2011;
  - December 2012, €group lowered this to 3M euribor plus 50bps;

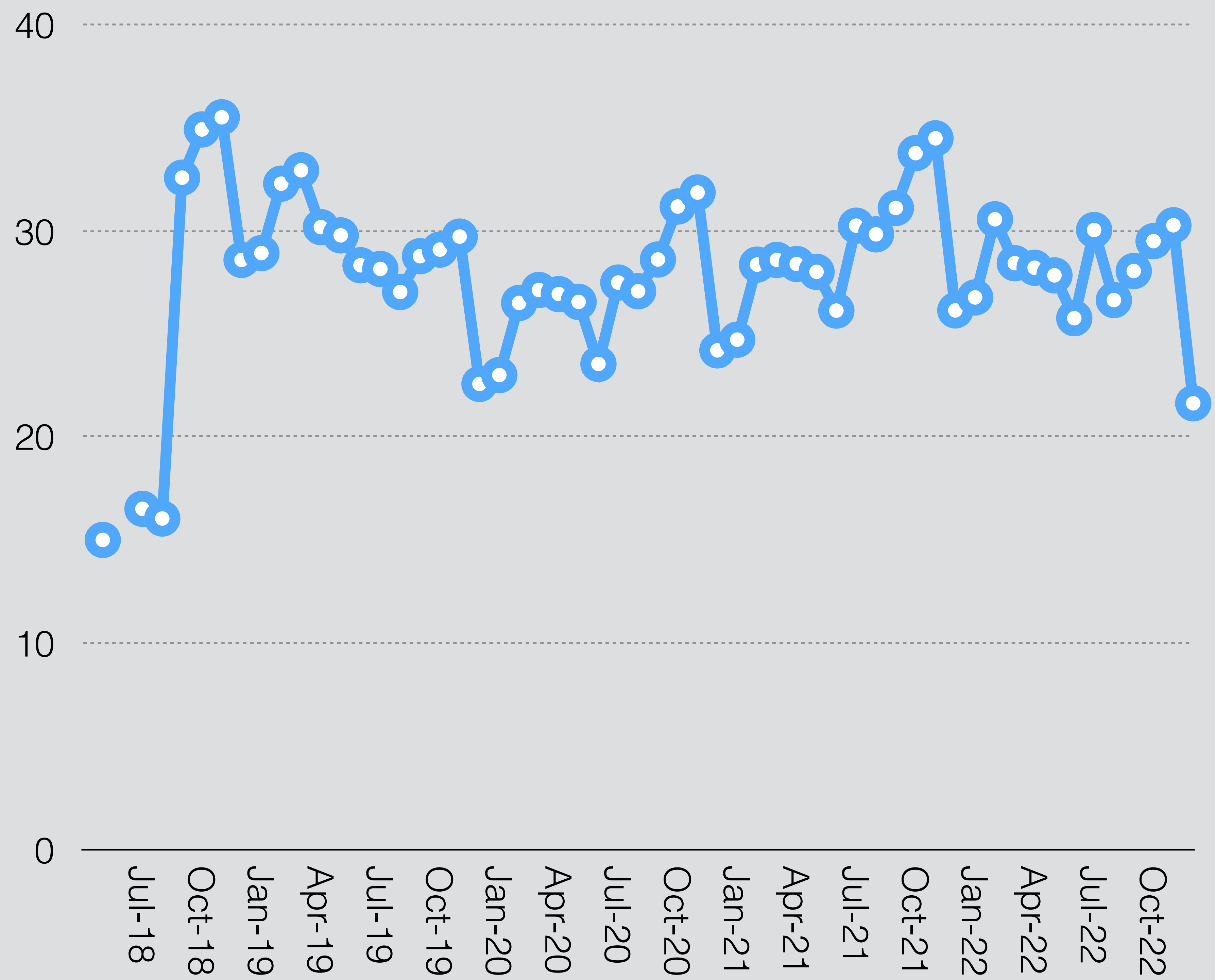
- Maturities also lengthened:
  - March 2011, grace period extended from 3 to 4.5 years; average maturity from 4 to 7.5 years, final reimbursement end of tenth year.

  - During the European Council meeting of July 2011 and €group Nov 2012 maturities were extended further; ultimately loans will be repaid in quarterly instalments between 2020 and 2041.

Government cash flow and liquidity

Projected deposit stock at BoG

$$\Delta D_G - (\Delta B_E + \Delta GEA) = S_P - (C_D + C_E) + \Delta B_D$$

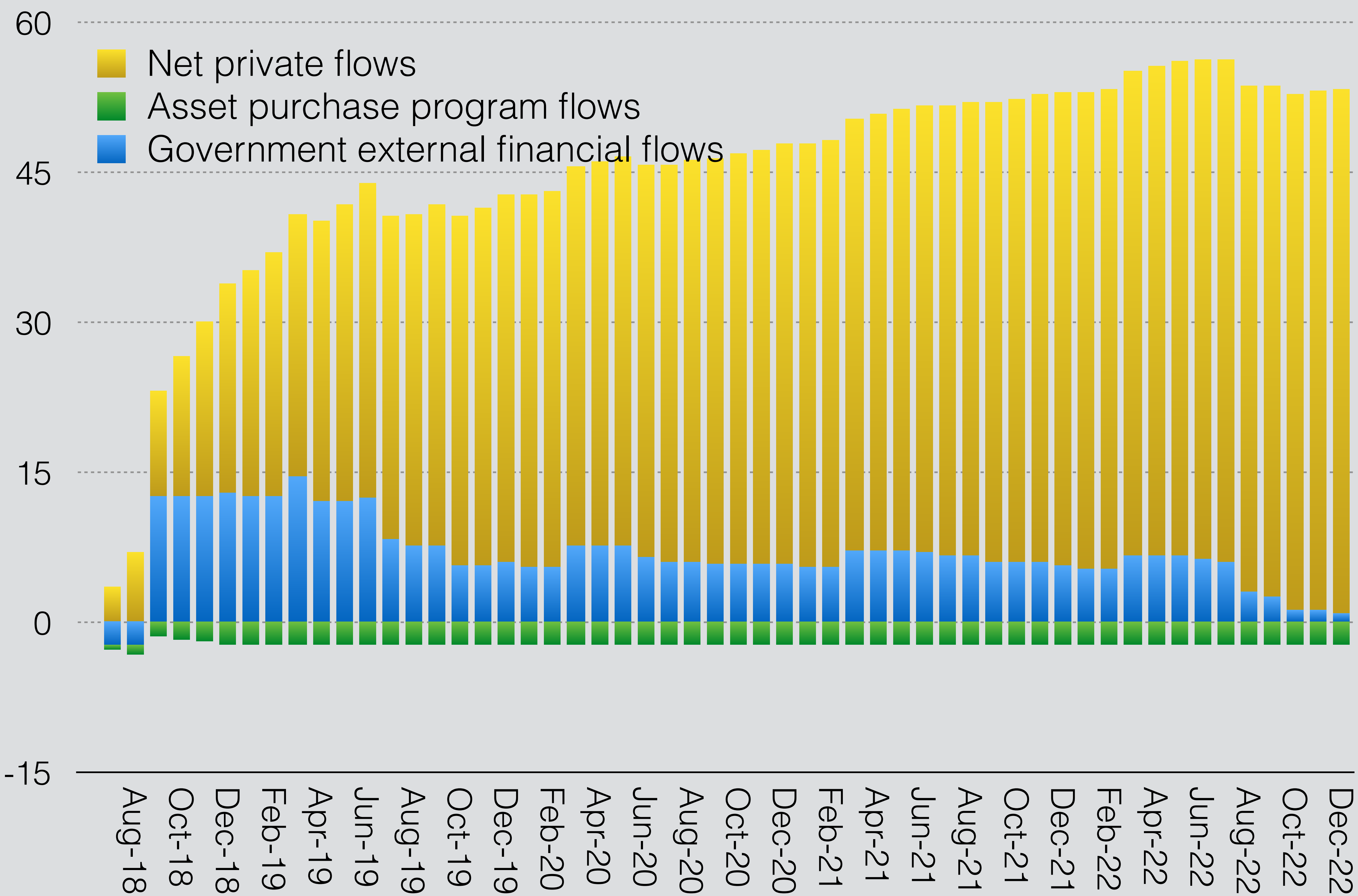


		SUM
Fiscal		
Primary balance		29.6
Interest/coupons		-17.6
Bonds		-7.8
IMF		-0.8
GLF		-0.5
EFSF		-2.1
ESM		-3.2
Other		-2.7
T-bill		-0.5
New ESM borrowing (end-prog)		15.0
SMP profits		5.8
Privatization proceeds (assume every 3 months)		3.0
T-bill balance		0.0
Amortization		-37.2
Bonds		-16.4
IMF		-9.1
GLF		-5.4
EFSF		0.0
ESM		0.0
Other		-4.2
New issuance redemption		-2.0
New issuance		8.0

TARGET2 balance projection

Greece cumulative future BOP cash flows (€ billions)

$$(\Delta T_A - \Delta T_L) + (\Delta APP - (\Delta B_E + \Delta GEA)) = CA - \Delta NFA$$



Greece TARGET2 debit

$$(\Delta T_A - \Delta T_L) + (\Delta APP - (\Delta B_E + \Delta GEA)) = CA - \Delta NFA$$