# Greece

## State financing gaps, funding sources
## & the case for debt restructuring

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# Contents

## *I.1.* Summary of views
*Key findings & policy implications*

## Debt sustainability analysis

- Greece's projected public debt dynamics **improved considerably in H2 2014 and in early 2015**, mainly due to:
  *-return of HFSF bank recap buffer (€10.9bn) to the EFSF;*
  *-lower projected interest rates (Euribor, EFSF funding) relative to the mid-2014 EC/ECB/IMF programme reviews; and*
  *-replacement of c. €11bn of external borrowing with lower cost intergovernmental borrowing.*

- **As a result of the above factors** (and assuming that key programme targets had remained achievable):
  *- cumulative projected decline (i.e., improvement) in the debt-to-GDP ratio of c. 13ppts in 2015-2022;*
  *- terminal debt ratio in FY-2020 & FY-2022 projected at 116.5% & 104.4%, respectively; and*
  *- therefore, no additional debt relief would be needed under the November 2012 framework (IMF Country Report No. 15/165).*

- However, **significant deterioration in public debt dynamics in recent months**, as a result of:
  *-downward revision in fiscal & privatization revenue targets;*
  *-lower official sector forecasts for short- and medium-term economic growth; and*
  *-other factors i.e., need to rebuild State cash buffers, clear arrears & reduce short-term intergovernmental borrowing.*

- **As a result of the above developments:**
  *-sharp deterioration of public debt dynamics & sizeable increase in future funding needs;*
  *-cumulative projected increase in the debt-to-GDP ratio of c. 55ppts in 2015-2022; and*
  *-change in official sector's definition of sustainability:*
  *<u>from</u> a stock concept: debt to GDP ratio 124% in 2020 & well below 110% in 2022 (November 2012 framework); <u>into</u>*
  *a cash-flow concept: projected gross borrowing requirement should not exceed 15%-of-GDP /annum in the medium-term .*

## *I.2.* Summary of views
*Key findings & policy implications*

### The case for further debt relief

*"gross financing needs-to-GDP in the adverse scenario are estimated at an average of around 12% in the 2020-2030 period and exceed in the following decades the 15% threshold" - Source: European Commission (August 2015).*

### Debt restructuring strategies

❑ New debt relief could be designed in many ways, though mostly involve one (or both) of the following two generic structures:
***a)*** *rescheduling of loan maturities with or without additional reductions in loan interest rates; and*
***b)*** *outright haircuts of outstanding loan principal amounts.*

❑ Present political & economy realities suggest option ***a)*** is the most likely outcome (after completion of 1st programme review).

❑ For demonstrative purposes, **two theoretical debt relief structures** are analyzed in the present study:
- *"soft" restructuring: 20yr loan maturity extension along with10yr deferral of interest & principal payments;*
- *"hard" restructuring: 50% write off of GLF loans or, alternatively, 50% write off of GLF & EFSF loans (€52.9bn & €130.9bn)*

❑ Provided that a "soft" restructuring (i.e., debt re-profiling) is finally chosen, **it is also imperative** to:
- *provide additional relief in the form of lower interest rates on GLF and, wherever possible, on EFSF and ESM loans.*

❑ According to our estimates, Greece's gross public borrowing needs increase by c. €15.5bn cumulatively per 0.25ppts upward shift in Euribor & EFSF/ESM funding curves post FY-2020 (full projection horizon 2015-2060).

## *I.3.* Summary of views
*Key findings & policy implications*

### Debt restructuring strategies (continued)

❑ ***"soft"* restructuring** implications:
- *no significant impact on the projected evolution of the debt-to-GDP ratio;*
- *any beneficial impact on the debt stock only in NPV terms;*
- *considerable cash-flow relief over the coming 3-4 decades.*

- average annual relief in 2016-2030 (ppts-of-2014 GDP):
  *c. 1.4% (if no change in interest rates) and 1.9% (if GLF, EFSF, ESM interest rates fixed at 0.5%).*

- average annual relief in 2016-2050 (ppts-of-2014 GDP):
  *c. 1.3% (if no change in interest rates) and 2.7% (if GLF, EFSF, ESM interest rate fixed at 0.5%).*

- increase in cumulative borrowing needs over full projection horizon (2016-2080) if no change in present interest rates.

❑ ***"hard"* restructuring** (50% write off of GLF & EFSF loans) implications:
- *considerable stock & cash-flow relief over the coming decades*
  *average annual cash-flow relief in 2016-2050 (ppts-of-2014 GDP): c. 1.8%*
  *projected debt ratio in 2020 and in 2022 in line with previous (June 2014) programme targets: 128% & 115%, respectively.*

**Key takeaway**

❑ **cash-flow relief of "hard restructuring" could potentially be replicated by debt rescheduling *i.e.,* "soft restructuring" along with lower interest rates.**

❑ **"Soft" restructuring could potentially meet the new condition for debt *sustainability* (i.e., average annual gross borrowing requirement no higher than 15% -of-GDP in the medium-term).**

❑ **However, we emphasize the need for lower (and fixed) interest rates on part or the entire package of EU loans, so as to avoid sharp unexpected increases in future debt service payments.**

## *I.4.* Summary of views
*Key findings & policy implications*

### Gross borrowing needs & funding sources

- ❑ Projected general government borrowing requirement (Aug. 2015 - Aug. 2018): *up to* €91.7bn (EC new baseline scenario).

- ❑ New bailout programme aims to provide full coverage of aforementioned requirement:
  *-up to €85.5bn in programme financing & €6.2bn privatization revenue.*

### Conditions for restoring medium-term fiscal sustainability

- ❑ Additional debt relief is needed to make projected borrowing needs more manageable in the coming decades.

- ❑ Resumption of positive economic growth is the most important precondition for restoring Greece's fiscal sustainability
  *-at current levels, the debt ratio increases by c. 2 units for every 1 unit decline in nominal GDP (and vice versa);*
  *-debt ratio changes 1-to-1 with corresponding changes in the primary balance or privatization revenues.*

- ❑ New DSA implies:
  *-cumulative (automatic) increase of c. 15ppts in the debt ratio in 2015-2016 due to the expected recession;*
  *-cumulative (automatic) decline of c. 18.5ppts in the debt ratio in 2017-2024, due to the expected GDP rebound.*

- ❑ Greece needs annual nominal GDP growth rates of at least 2.7% over the coming decade,
  *- so as to merely stabilize its public debt ratio.*

## II. General government borrowing needs & sources of financing

*Projections, scenarios and funding strategies*

# General government borrowing needs & sources of funding (in EURbn)

*New (3rd) bailout programme baseline scenario*

**General government gross borrowing requirement & funding sources August 2015-August 2018 (EURbn)**

| | 2015 Aug-Dec | FY-2016 | FY-2017 | 2018 Jan-Aug |
|---|---|---|---|---|
| **A. Borrowing need (I.1 + I.2 +...+I.5)** | **47.9** | **18.0** | **18.1** | **7.7** |
| **I.1** General gvnt <u>cash</u> primary balance[1] *("-" = suplus / "+" = deficit)* | 2.3 | 0.2 | -1.4 | -2.6 |
| **I.2** Debt service *(interest & amortization payments)* | 14.3 | 12.8 | 18.8 | 8.3 |
| *of which* | | | | |
| *I.2.1 Official-sector loan redemptions* | *10.6* | *3.0* | *0.7* | *1.3* |
| *IMF* | *3.5* | *3.0* | *0.7* | *1.3* |
| *EU/ESM/EFSM bridge loan* | *7.2* | *0.0* | *0.0* | *0.0* |
| *I.2.2 Unwinding of repo operations [2]* | *0.0* | *1.5* | *1.5* | *0.5* |
| **I.3** Banking sector needs[3] | 25.0 | 0.0 | 0.0 | 0.0 |
| **I.4** Arrears clearance[4] | 3.1 | 3.4 | 0.7 | 0.0 |
| **I.5** State cash buffer & SDR holdings[5] | 3.3 | 1.7 | 0.1 | 2.6 |
| **B. Funding source (II.1+II.2+II.3)** | **47.9** | **18.0** | **18.1** | **7.7** |
| **II.1** Market access | 0.0 | 0.0 | 0.0 | 0.0 |
| **II.2** Privatisation revenue[6] | 1.2 | 3.6 | 1.2 | 0.0 |
| **II.3** Programme financing | 46.7 | 14.2 | 16.8 | 7.7 |
| *of which* | | | | |
| *II.3.1 ANFA & SMP profits [7]* | *0.0* | *0.7* | *0.3* | *0.3* |
| *II.3.2 Official loan disbursements (ESM + IMF?)* | *46.7* | *13.5* | *16.5* | *7.4* |

*Source: ECB, EC, Eurobank Research*

1/ Assumes relaxation of primary surplus target (% GDP) as follows: 2015: -0.25%; 2016: +0.5%, 2017: +1.75%; 2018-2020: +3.5%

2/ Assumes partial unwinding of repo operations (by EUR 3.5bn) to c. EUR 6.2bn at the end of the programme period

3/ EUR 10bn in August 2015 & EUR 25bn in October 2015

4/ Arrears clearance is estimated at c. EUR 7bn over the programme period

5/ Assumes gradual rebuilding of government cash buffer to c. EUR 8bn at the end of the programme period (EUR 770mn of this will be used to replenish Greece's SDR holdings account).

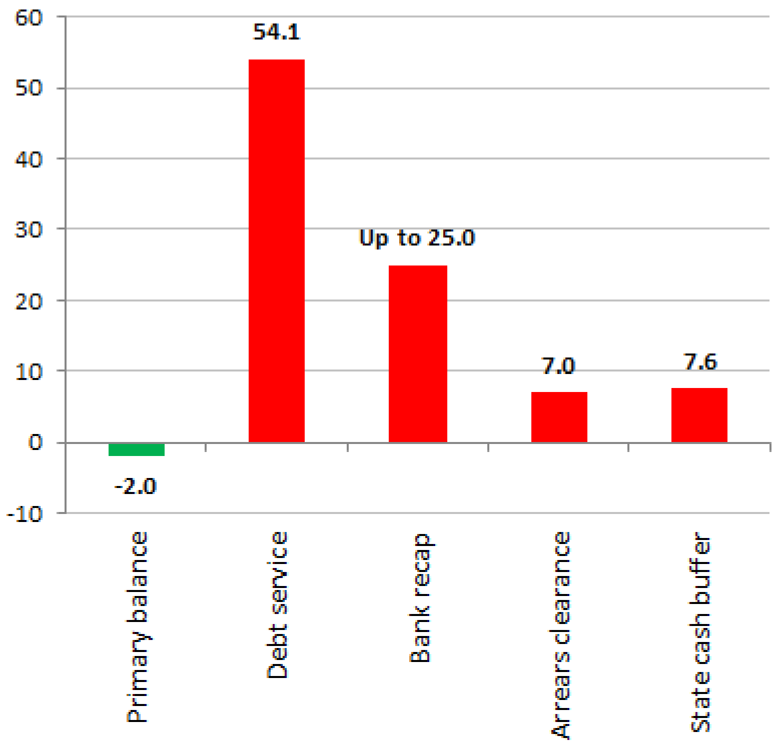
*6/ Receipts from the privatisation of bank assets asumed to materialize only after the programme period*

7/ Assumed ANFA & SMP profits only include BoG transfers

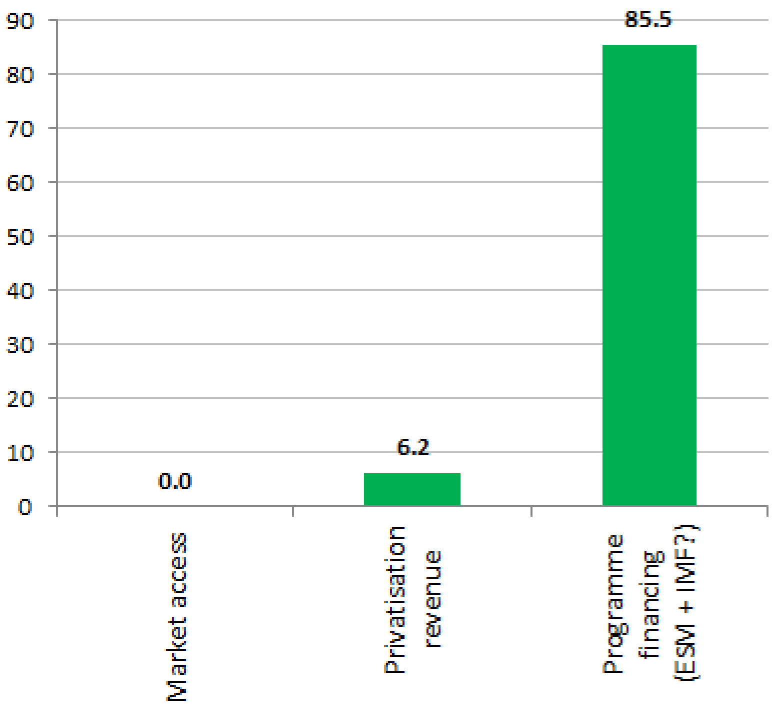
Source: European Commission (August 2015), Eurobank Economic Research

# New bailout programme aims to provide full coverage of projected public borrowing requirement over a 3-year horizon

**General government gross borrowing need**
*Aug 2015-Aug 2018 (up to €91.7bn)*




**General government funding sources**
*Aug 2015-Aug 2018 (up to €91.7bn)*




Source: ECB, EC, Eurobank Economic Research

# Projected evolution of Greece's public funding needs & debt stock

*Main drivers since the mid-2014 programme reviews*

**Background factors**

- **Return of HFSF bank recapitalization buffer of €10.9bn to the EFSF (Feb. 2015):**
  - interest savings (accrual basis) up to €1.1 billion & cumulative debt stock decrease of c 4.9ppts of GDP in 2015-2022
- **Lower projected interest rates (Euribor, EFSF funding) relative to the mid-2014 EC/ECB/IMF reviews:**
  - interest savings (accrual basis) up to 30 percent & cumulative debt stock decrease of c. 9.1ppts of GDP in 2015-2022
- **Replacement of c. €11bn of external borrowing with intergovernmental (local government, social security funds & other):**
  - cumulative debt stock decrease of c. 5ppts of GDP in 2015-2022, assuming permanent rolling over of 2/3rds of respective borrowing
- **Weaker GDP performance (and downward statistical revisions to historical GDP) relative to the mid-2014 EC/ECB/IMF reviews:**
  - cumulative debt stock increase of 4ppts of GDP in 2015-2022

***Implications of above factors, provided that key programme targets had remained achievable:***

- *cumulative improvement (decrease) in the debt ratio of 13ppts in 2015-2022*
- *no further relief would be needed under the November 2012 framework*

**Changes in policies & outlook since early 2015**

- **Downward revision of fiscal targets**
  - 0.9ppts deviation from agreed fiscal target in FY-2014 & downward revisions of future fiscal targets (from FY-2015 onwards)
- **Downward revision of privatization revenue targets**
  - to €13.9bn in 2015-2022 vs. €23bn envisaged in the previous programme
- **Lower economic growth projections**
  - downwardly revised GDP growth forecasts for 2015 & 2016
  - downwardly revised long-term real growth forecasts (*i.e.,* by 0.5ppts/annum in IMF June-2015 DSA & by 0.25ppts in EC August-2015 DSA)
- **Other**
  - need to rebuild State cash buffers, clear arrears & reduce short-term intergovernmental borrowing

***implications of above factors:***

- *sharp deterioration of public debt dynamics & sizeable increase in projected funding needs*

## III. Public debt sustainability analysis

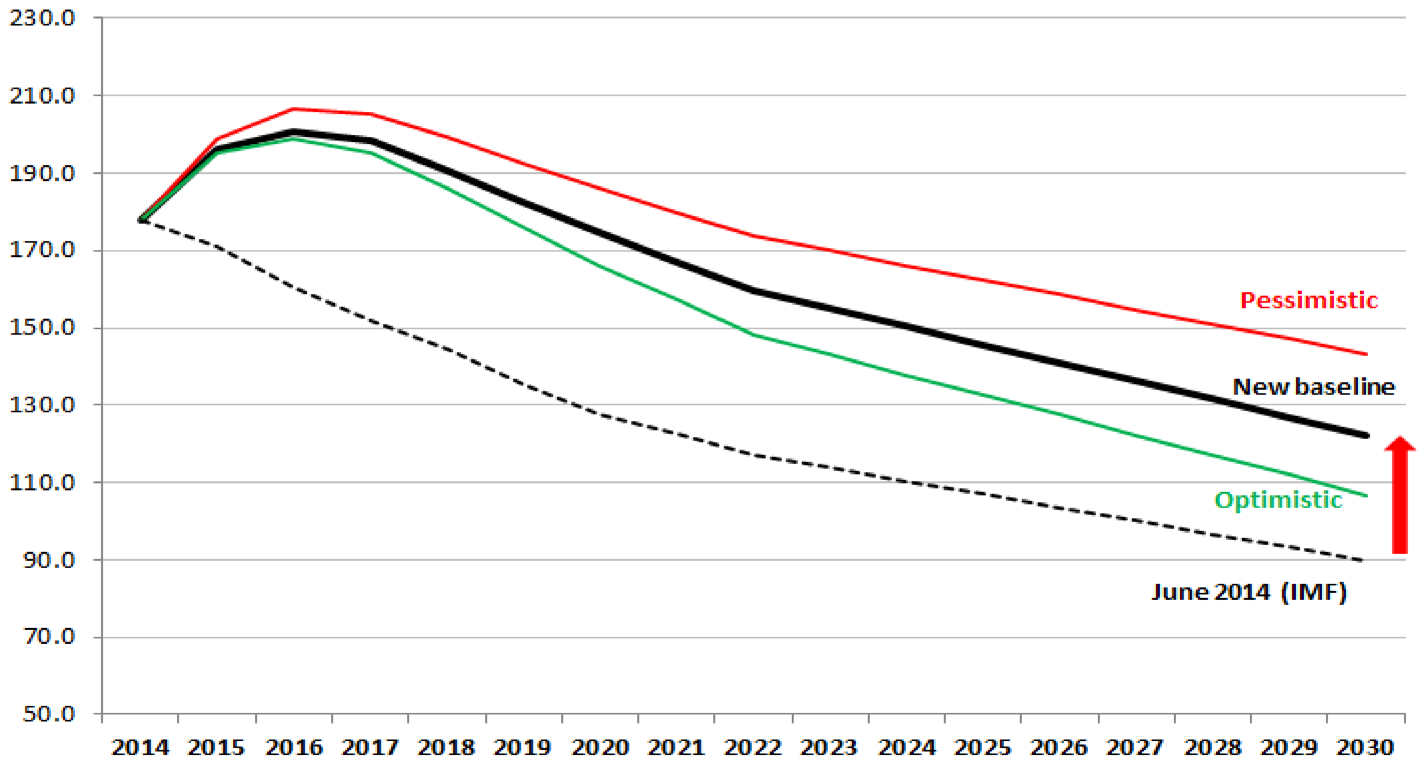
*Scenarios & implications*

# Projected public debt dynamics deteriorate significantly

*Downwardly revised fiscal targets, slower GDP growth & bank recap needs*

**DSA scenarios***

*Greece's gross public debt (% GDP)*




Source: European Commission (August 2015), Eurobank Economic Research

***"New baseline"***: New baseline scenario assumed in the 3rd bailout programme
***"Optimistic":*** *Baseline scenario adjusted to incorporate i) 0.5ppt higher GDP growth & ii) higher privatization receipts in 2015-2022 (€24.6bn vs. €13.9bn)*
***"Pessimistic":*** *Baseline scenario adjusted to incorporate i) 0.5ppt lower GDP growth; ii) lower privatization receipts in 2015-2022 (€3.7bn vs. €13.9bn); and iii) lower primary fiscal targets (-1% in 2015, 0% in 2016, 1.5% in 2017, 2% in 2018 and 3.5%-of-GDP from 2019 onwards)*

# Public Debt Sustainability Analysis*

## *Underlying macroeconomic assumptions*

**IMF baseline** (June 2014)

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|
| Real GDP growth (%) | 2.9 | 3.7 | 3.5 | 3.3 | 3.6 | 2.6 | 2.0 | 1.9 | 1.9 | 1.9 |
| GDP deflator (%) | 0.4 | 1.1 | 1.3 | 1.4 | 1.8 | 1.8 | 2.0 | 2.0 | 2.0 | 2.0 |
| Nominal GDP growth (%) | 3.3 | 4.9 | 4.8 | 4.7 | 5.5 | 4.4 | 4.0 | 3.9 | 3.9 | 3.9 |
| Primary fiscal balance (%) | 3.0 | 4.5 | 4.5 | 4.2 | 4.2 | 4.2 | 4.0 | 4.0 | 4.0 | 4.0 |
| Nominal effective interest rate on debt (%) | 2.9 | 3.1 | 3.4 | 3.5 | 3.5 | 3.4 | 3.6 | 3.6 | 3.6 | 3.8 |

**IMF baseline** (June 2015)

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|
| Real GDP growth (%) | 0.0 | 2.0 | 3.0 | 3.0 | 2.0 | 1.7 | 1.7 | 1.5 | 1.5 | 1.5 |
| GDP deflator (%) | -1.2 | 0.7 | 1.4 | 1.5 | 1.8 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 |
| Nominal GDP growth (%) | -1.2 | 2.8 | 4.4 | 4.5 | 3.9 | 3.7 | 3.7 | 3.5 | 3.5 | 3.5 |
| Primary fiscal balance (%) | 1.0 | 2.0 | 3.0 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nominal effective interest rate on debt (%) | 2.1 | 2.2 | 2.2 | 2.2 | 2.4 | 2.5 | 2.8 | 3.0 | 3.2 | 3.5 |

**European Commission baseline (August 2015)**

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|
| Real GDP growth (%) | -2.3 | -1.3 | 2.7 | 3.1 | 3.0 | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 |
| GDP deflator (%) | -0.9 | 0.6 | 0.7 | 1.4 | 1.5 | 1.8 | 1.9 | 2.0 | 2.0 | 2.0 |
| Nominal GDP growth (%) | -3.2 | -0.7 | 3.4 | 4.5 | 4.5 | 3.8 | 3.7 | 3.8 | 3.8 | 3.8 |
| Primary fiscal balance (%) | -0.3 | 0.5 | 1.8 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nominal effective interest rate on debt (%) | 2.1 | 2.1 | 2.1 | 2.1 | 2.3 | 2.4 | 2.6 | 2.8 | 3.2 | 3.5 |

**European Commission pessimistic scenario** (August 2015)

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|
| Real GDP growth (%) | -2.8 | -1.8 | 2.2 | 2.6 | 2.5 | 1.5 | 1.3 | 1.3 | 1.8 | 1.8 |
| GDP deflator (%) | -0.9 | 0.6 | 0.7 | 1.4 | 1.5 | 1.8 | 1.9 | 2.0 | 2.0 | 2.0 |
| Nominal GDP growth (%) | -3.7 | -1.2 | 2.9 | 4.0 | 4.0 | 3.3 | 3.2 | 3.3 | 3.8 | 3.8 |
| Primary fiscal balance (%) | -1.0 | 0.0 | 1.5 | 2.0 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nominal effective interest rate on debt (%) | 2.1 | 2.1 | 2.1 | 2.1 | 2.2 | 2.3 | 2.6 | 2.8 | 3.2 | 3.5 |

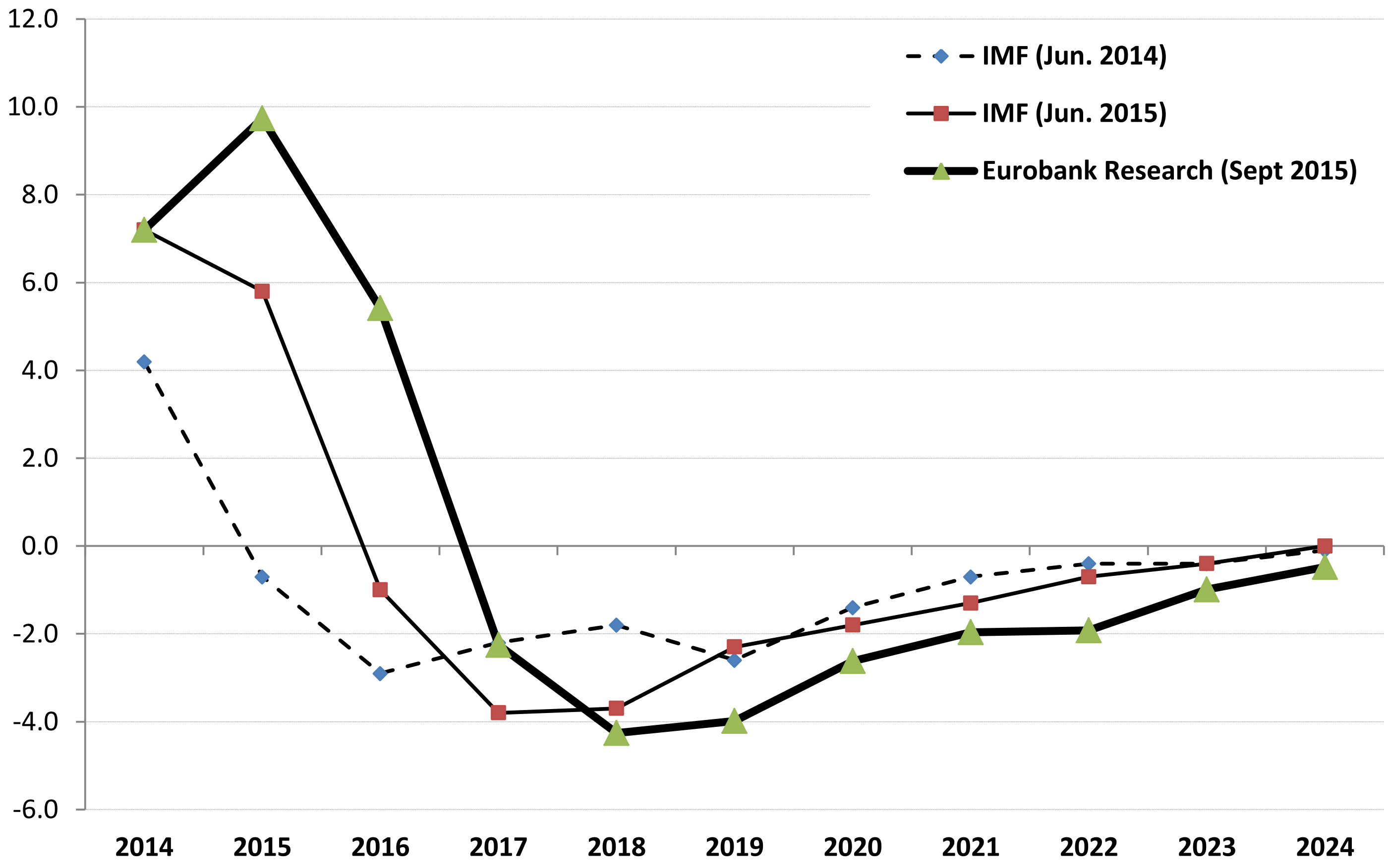
**European Commission optimistic scenario (August 2015)**

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|
| Real GDP growth (%) | -1.8 | -0.8 | 3.2 | 3.6 | 3.5 | 2.5 | 2.3 | 2.3 | 1.8 | 1.8 |
| GDP deflator (%) | -0.9 | 0.6 | 0.7 | 1.4 | 1.5 | 1.8 | 1.9 | 2.0 | 2.0 | 2.0 |
| Nominal GDP growth (%) | -2.7 | -0.2 | 3.9 | 5.1 | 5.1 | 4.3 | 4.2 | 4.3 | 3.8 | 3.8 |
| Primary fiscal balance (%) | -0.3 | 0.5 | 1.8 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nominal effective interest rate on debt (%) | 2.1 | 2.1 | 2.1 | 2.1 | 2.3 | 2.4 | 2.6 | 2.9 | 3.2 | 3.5 |

Source: IMF (June 2014, June 2015), EC (August 2015), Eurobank Economic Research
(*) Eurobank estimates/forecasts for missing values in official documents

## Snowball effect on Greek public debt (in ppts-of-GDP)*

*Automatic increase (positive values) / decrease (negative values) in the debt ratio due to GDP growth – interest rate differential*




Source: IMF (June 2014, June 2015), EC (August 2015), Eurobank Economic Research
(*) Eurobank Research estimates implied by EC's August DSA baseline scenario

**IV. Public debt sustainability analysis**

Hard and soft restructuring strategies

*Stock relief & cash flow impact*

## A re-profiling of Greek public debt now appears the most likely scenario

*Post the successful completion of the 1st programme review*

- **New debt relief package likely to include:**
  loan maturity extensions and deferral of interest & amortization payments on all EU loans (GLF, EFSF & ESM)
- **Also imperative to provide additional relief**
  in the form of lower (and fixed) interest rates on GLF and, wherever possible, on EFSF and ESM loans

**Interest rate sensitivity of gross borrowing requirement (EUR bn)**

Projected change (increase) in the general government gross borrowing requirement
per 0.25ppts upward parallel shift in the 3m & 6m Euribor curves as well as in the EFSF & ESM funding curves post-2020

| | 2016-2022 | 2023-2030 | 2031-2040 | 2041-2050 | 2051-2060 | **2016-2060** |
|---|---|---|---|---|---|---|
| GLF (1st program) | 0.3 | 0.8 | 0.6 | 0.0 | 0.0 | **1.6** |
| EFSF loans (2nd program) | 0.2 | 2.6 | 2.8 | 1.6 | 0.3 | **7.4** |
| ESM loans (3rd program) | 1.3 | 1.7 | 2.0 | 1.3 | 0.4 | **6.6** |
| **Total change** | **1.7** | **5.0** | **5.3** | **2.9** | **0.7** | **15.7** |

Source: Eurobank Economic Research

Note: Our calculations assume full disbursement of ESM loans (3rd programme) as envisaged in the new loan agreement signed in August 2015.

# "Soft" restructuring (debt re-profiling) scenarios

*Impact on the general government gross borrowing requirement*

**20yr maturity extension & 10yr deferral of interest & amortization payments (all EU loans)**

*Change in the general government borrowing requirement in EUR bn*

*"-" denotes improvement (decrease) / "+" denotes deterioration (increase)*

| **Scenario I.1**<br>**No change in loan interest rates** | **2016-2022** | **2023-2030** | **2031-2040** | **2041-2050** | **2051-2060** | **2061-2070** | **2071-2080** | **2016-2080** |
|---|---|---|---|---|---|---|---|---|
| GLF (1st program) | -8.2 | -14.0 | -3.7 | 21.2 | 18.4 | 1.7 | 0.0 | |
| EFSF loans (2nd program) | -0.5 | -12.6 | -23.9 | -32.5 | 29.6 | 65.5 | 20.6 | |
| ESM loans (3rd program) | -1.1 | -0.9 | -2.3 | -6.4 | -5.5 | 26.8 | 20.8 | |
| **Total impact** | **-9.8** | **-27.4** | **-29.9** | **-17.7** | **42.5** | **94.0** | **41.4** | **92.9** |

| **Scenario I.2**<br>**Fixed interest rate 0.50% on all loans** | **2016-2022** | **2023-2030** | **2031-2040** | **2041-2050** | **2051-2060** | **2061-2070** | **2071-2080** | **2016-2080** |
|---|---|---|---|---|---|---|---|---|
| GLF (1st program) | -8.2 | -17.3 | -11.2 | 16.1 | 15.9 | 1.6 | 0.0 | |
| EFSF loans (2nd program) | -0.5 | -20.1 | -40.3 | -49.0 | 16.0 | 56.8 | 19.5 | |
| ESM loans (3rd program) | -0.3 | -4.8 | -13.9 | -17.7 | -14.0 | 21.2 | 18.3 | |
| **Total impact** | **-9.0** | **-42.2** | **-65.4** | **-50.5** | **18.0** | **79.6** | **37.8** | **-31.9** |

| **Scenario I.3**<br>**Fixed interest rate 0.25% on all loans** | **2016-2022** | **2023-2030** | **2031-2040** | **2041-2050** | **2051-2060** | **2061-2070** | **2071-2080** | **2016-2080** |
|---|---|---|---|---|---|---|---|---|
| GLF (1st program) | -8.2 | -17.9 | -12.6 | 15.1 | 15.3 | 1.5 | 0.0 | |
| EFSF loans (2nd program) | -0.5 | -22.4 | -43.9 | -52.2 | 13.2 | 53.6 | 18.8 | |
| ESM loans (3rd program) | -1.1 | -6.2 | -16.7 | -20.2 | -16.0 | 19.7 | 17.3 | |
| **Total impact** | **-9.8** | **-46.4** | **-73.2** | **-57.3** | **12.5** | **74.9** | **36.2** | **-63.3** |

Source: EC (August 2015), Eurobank Economic Research

***Notes***

- The Euribor rates utilized in our calculations are derived from the 3m & 6m Euribor futures curves (as of September 3, 2015).
- The EFSF & ESM funding rates utilized in our calculations are based on a polynomial of 5th degree fit on the present EFSF & ESM cost curves.
- Our exercise assumes full disbursement of ESM loans (3rd programme) as envisaged in the new loan agreement signed in August 2015.
- Loan amortization profiles as shown in Appendix I at the end of this document

# “Soft” restructuring (debt re-profiling) scenarios

*Impact on the debt ratio*

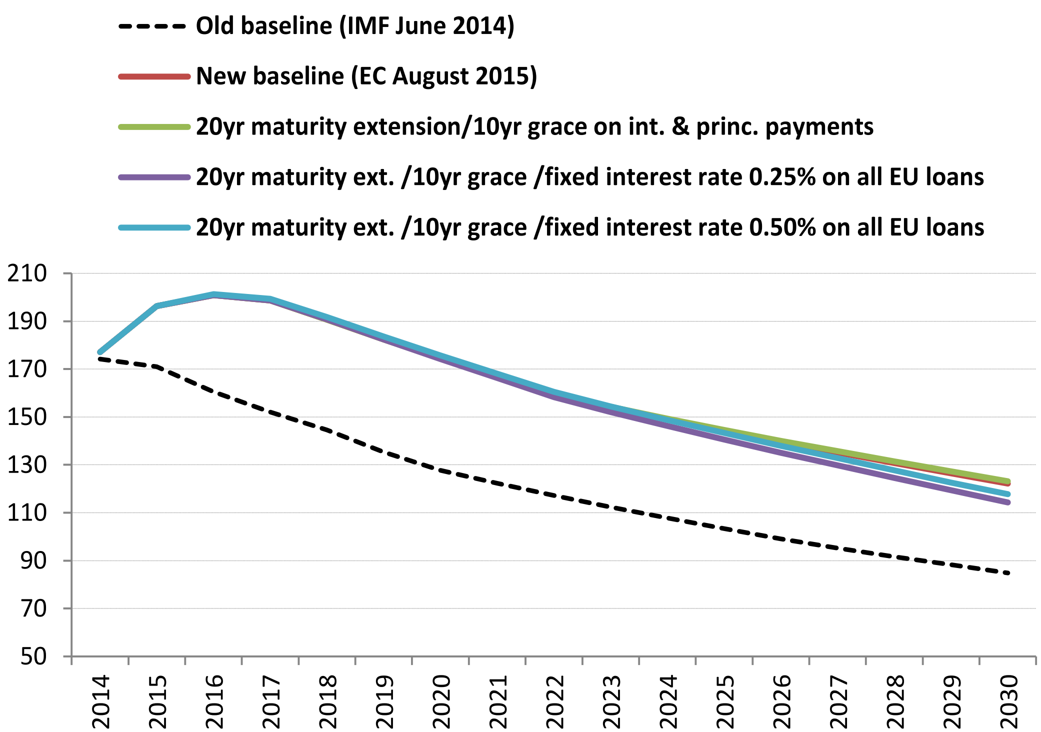
**Evolution of Greece’s public debt to GDP ratio**

Old and new baseline scenarios compared to three hypothetical restructuring scenarios assuming:

*20-year maturity extension and 10 year deferral of interest & amortization payments on all EU loans (GLF, EFSF & ESM);*

*20-year maturity extension,10 year deferral of interest & amortization payments & fixed interest rate 0.50% on all EU loans; and*

*20-year maturity extension,10 year deferral of interest & amortization payments & fixed interest rate 0.25% on all EU loans*




| | 2015 | 2020 | 2022 | 2030 |
|---|---|---|---|---|
| Old baseline (IMF June 2014) | 171 | 128 | 117 | 85 |
| New baseline (EC August 2015) | 196 | 175 | 160 | 122 |
| New baseline (20yr maturity extension & 10yr grace on payments) | 196 | 175 | 160 | 123 |
| New baseline (20yr maturity ext., 10yr grace & 0.50% interest rate) | 196 | 176 | 160 | 118 |
| New baseline (20yr maturity ext., 10yr grace & 25% interest rate) | 196 | 174 | 158 | 114 |

Source: EC (August 2015), Eurobank Economic Research

Note: Our projections assume full disbursement of ESM loans (3rd programme) as envisaged in the new loan agreement signed in August 2015

# “Hard” restructuring scenarios

## *Impact on the general government gross borrowing requirement*

**New baseline (EC August 2015) compared to hypothetical restructuring scenario incorporating 50% write off of GLF & EFSF loans**

Interest and amortization payments in EUR billions

*“-” denotes improvement (decrease) in borrowing requirement / “+” denotes deterioration (increase) in borrowing requirement*

| **Scenario II.1**<br>**Baseline (no policy change)** | **2016-2022** | **2023-2030** | **2031-2040** | **2041-2050** | **2051-2060** |
|---|---|---|---|---|---|
| GLF (1st program) | 8.2 | 26.1 | 28.7 | 0.6 | 0.0 |
| EFSF loans (2nd program) | 0.5 | 31.8 | 59.3 | 67.3 | 20.3 |
| ESM loans (3rd program) | 1.1 | 7.5 | 32.1 | 40.9 | 36.2 |
| **Total impact** | **9.8** | **65.3** | **120.1** | **108.8** | **56.5** |
| | | | | | |
| **Scenario II.2**<br>**50% haircut on GLF and EFSF loans** | **2016-2022** | **2023-2030** | **2031-2040** | **2041-2050** | **2051-2060** |
| GLF (1st program) | 4.1 | 13.0 | 14.3 | 0.3 | 0.0 |
| EFSF loans (2nd program) | 0.2 | 15.9 | 29.6 | 33.6 | 10.2 |
| ESM loans (3rd program) | 1.1 | 7.5 | 32.1 | 40.9 | 36.2 |
| **Total impact** | **5.5** | **36.4** | **76.1** | **74.8** | **46.4** |
| | | | | | |
| **Change in interest and amortization payments due to 50% write off** | **-4.4** | **-28.9** | **-44.0** | **-33.9** | **-10.2** |

Source: IMF (June 2014), EC (August 2015), Eurobank Economic Research

Note: Our projections assume full disbursement of ESM loans (3rd programme) as envisaged in the new loan agreement signed in August 2015; It also assumes that GLF & EFSF loan write offs takes place before end-2015.

## “Hard” restructuring scenarios

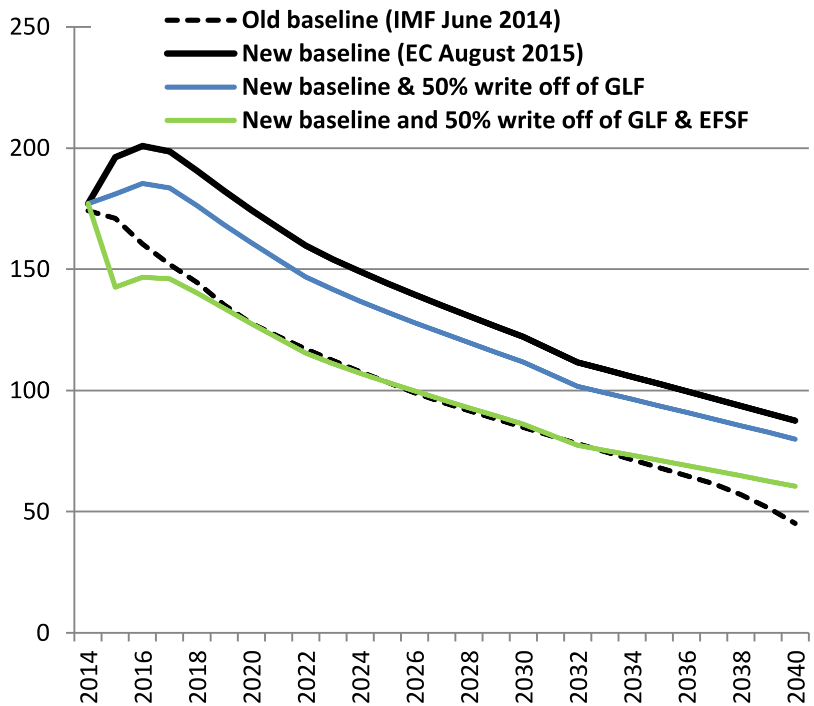
*Impact on the debt ratio*

**Evolution of Greece’s public debt to GDP ratio**

Old and new baseline vs. two hypothetical restructuring scenarios assuming:

*50% write off of GLF loans (1st programme); and*

*50% write off of GLF & EFSF loans (1st and 2nd programmes)*




| | 2015 | 2020 | 2022 | 2030 |
|---|---|---|---|---|
| **Old baseline (IMF June 2014)** | 171 | 128 | 117 | 85 |
| **New baseline (EC August 2015)** | 196 | 175 | 160 | 122 |
| **New baseline (50% write off of GLF)** | 181 | 161 | 147 | 112 |
| **New baseline (50% write off of GLF & EFSF)** | 143 | 128 | 115 | 86 |

Source: IMF (June 2014), EC (August 2015), Eurobank Economic Research

Note: Our exercise assumes full disbursement of ESM loans (3rd programme) as envisaged in the new loan agreement signed in August 2015

It also assumes that EU loan write off takes place before end-2015.

**V. Where we currently stand**

Gross public debt

*Structure by type of holder, currency of denomination & legal status*

Funding sources

*Loan disbursements under the first two programmes & remaining commitments*

# Loan disbursements under the first two adjustment programmes (in EUR bn)

*Total funds released c. € 226.8bn (= €194.8bn EU + €32bn IMF)*

| 1st programme | | Euro-area Member States | | IMF | | Total |
|---|---|---|---|---|---|---|
| 1st disbursement | | 18 May 2010 | 14.5 | 12 May 2010 | 5.5 | 20.0 |
| 2nd disbursement | | 13 September 2010 | 6.5 | 14 September 2010 | 2.5 | 9.0 |
| 3rd disbursement | | 19 January 2011 | 6.5 | 21 December 2010 | 2.5 | 9.0 |
| 4th disbursement | | 16 March 2011 | 10.9 | 16 March 2011 | 4.1 | 15.0 |
| 5th disbursement | | 15 July 2011 | 8.7 | 13 July 2011 | 3.3 | 12.0 |
| 6th disbursement | | 14 December 2011 | 5.8 | 7 December 2011 | 2.2 | 8.0 |
| **1st programme - Total disbursements** | | | **52.9** | | **20.1** | **73.0** |
| **2nd programme** | | **EFSF [1]** | | **IMF** | | **Total** |
| 1st disbursement | 1st tranche [2] | 12 March, 10 April and 25 April 2012 | 29.7 | 19 March 2012 | 1.6 | |
| | 2nd tranche [3] | 12 March, 10 April and 25 April 2012 | 4.9 | | | |
| | 3rd tranche | 19 March 2012 | 5.9 | | | |
| | 4th tranche | 10 April 2012 | 3.3 | | | |
| | 5th tranche [4] | 19 April 2012 | 25.0 | | | |
| | 6th tranche | 10 May 2012 | 4.2 | | | |
| | 7th tranche | 28 June 2012 | 1.0 | | | |
| | **Total** | | **74.0** | | | |
| 2nd disbursement | 1st tranche [5] | 17 and 19 December 2012 | 34.3 | 16 January 2013 | 3.24 | |
| | 2nd tranche | 31 January 2013 | 2.0 | | | |
| | 3rd tranche | 28 February 2013 | 2.8 | | | |
| | 4th tranche | 3 May 2013 | 2.8 | | | |
| | 5th tranche [6] | 31 May 2013 | 7.2 | | | |
| | **Total** | | **49.1** | | | |
| 3rd disbursement | 1st tranche | 17 May 2013 | 4.2 | 6 June 2013 | 1.73 | |
| | 2nd tranche | 25 June 2013 | 3.3 | | | |
| | **Total** | | **7.5** | | | |
| 4th disbursement | 1st tranche | 31 July 2013 | 2.5 | 2 August 2013 | 1.71 | |
| | 2nd tranche | 18 December 2013 | 0.5 | | | |
| | **Total** | | **3.0** | | | |
| 5th disbursement | 1st tranche | April 2014 | 6.3 | | | |
| | 2nd tranche | July 2014 | 1.0 | June 2014 | 3.5 | |
| | 3rd tranche | August 2014 | 1.0 | | | |
| | **Total** | | **8.3** | | | |
| **2nd programme - Total disbursements till August 2014** | | | **141.9** | | **11.9** | **153.8** |
| **1st & 2nd programme - Total disbursements till August 2014** | | | **194.8** | | **32.0** | **226.8** |

[1] This table does not include EUR 35.0 billion of EFSF notes handed over to the ECB on the 7th of March 2012 as collateral, so that ECB continues to accept SD – rated Greek government bonds in monetary financing activities. EFSF notes has been released by the ECB on the 25th of July 2012.

[2] Sweetener PSI, EFSF notes [3] Accrued interest PSI, EFSF notes [4] Bank recapitalisation, EFSF notes

[5] Includes bank recapitalisation [6] Bank recapitalisation, EFSF notes

Source: EC, EFSF, IMF, Eurobank Economic Research

# Schedule of central government amortization payments (in EUR bn)

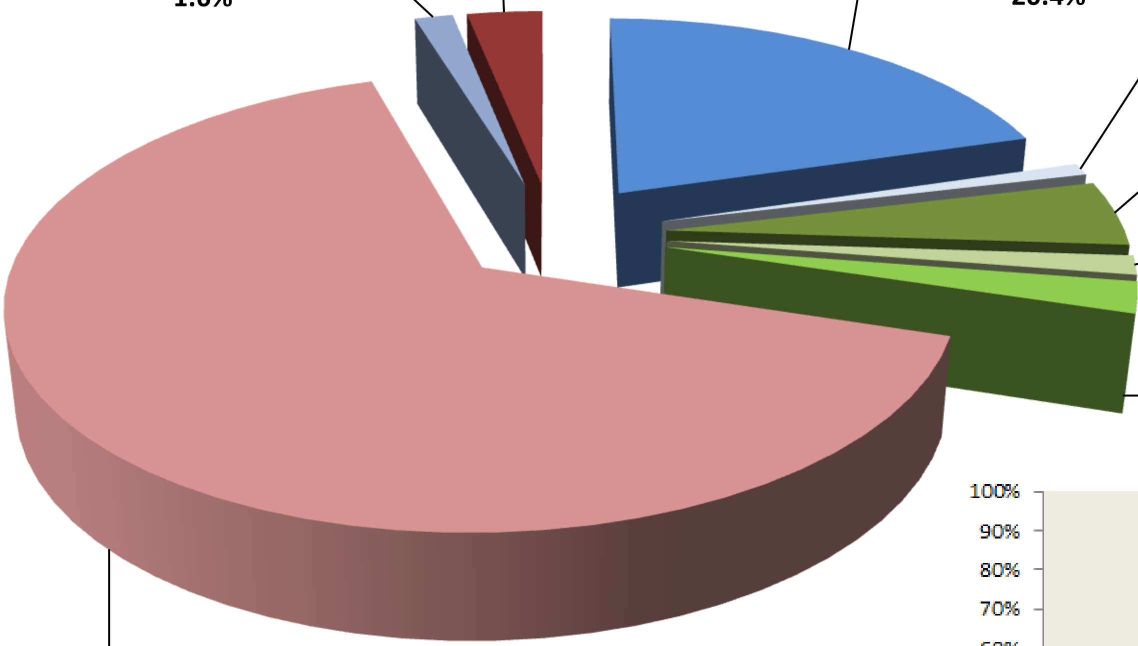
*As of end-May 2015; do not incorporate EFSM bridge loan & funding under the 3rd programme*

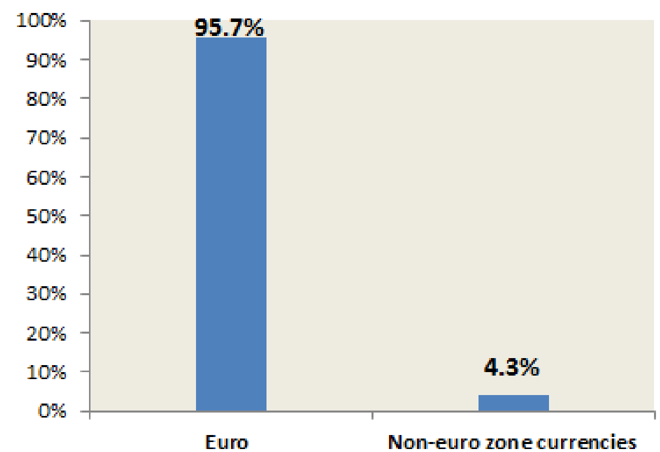
| | T-bills | NCBs (ANFA) | ECB (SMP) | Bonds | BoG loans | Special purpose & bilateral international loans (EIB) | Other international loans | EFSF loans | GLF loans (1st bailout) | IMF loans | Repos | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2015 | 14.944 | 1.529 | 5.151 | 0.068 | 0.472 | 0.294 | 0.085 | | | 5.498 | 10.287 | **38.328** |
| 2016 | | 0.852 | 1.509 | 0.532 | 0.472 | 0.312 | 0.555 | | | 2.995 | | **7.227** |
| 2017 | | 1.624 | 3.656 | 2.677 | 0.472 | 0.302 | 0.209 | | | 0.708 | | **9.648** |
| 2018 | | 0.590 | 1.280 | 0.029 | 0.472 | 0.303 | 0.163 | | | 1.763 | | **4.600** |
| 2019 | | 0.996 | 4.791 | 4.839 | 0.472 | 0.317 | 0.167 | | | 2.046 | | **13.628** |
| 2020 | | 0.234 | 1.132 | | 0.472 | 0.324 | 0.166 | | 0.706 | 2.046 | | **5.080** |
| 2021 | | | | | 0.472 | 0.391 | 0.171 | | 2.074 | 2.046 | | **5.154** |
| 2022 | | 0.768 | 0.539 | 0.005 | 0.472 | 0.392 | 0.176 | | 2.645 | 1.910 | | **6.907** |
| 2023 | | | | 1.792 | 0.487 | 0.391 | 0.182 | 2.373 | 2.645 | 1.338 | | **9.208** |
| 2024 | | 0.215 | 1.091 | 1.771 | | 0.398 | 0.187 | 2.373 | 2.645 | 0.284 | | **8.964** |
| 2025 | | 0.059 | | 1.744 | | 0.405 | 0.193 | 2.373 | 2.645 | | | **7.419** |
| 2026 | | 0.240 | 0.697 | 1.499 | | 0.406 | 0.199 | 2.373 | 2.645 | | | **8.059** |
| 2027 | | | | 1.470 | | 1.369 | 0.205 | 2.373 | 2.645 | | | **8.062** |
| 2028 | | | | 1.725 | | 0.515 | 0.211 | 2.373 | 2.645 | | | **7.469** |
| 2029 | | | | 1.504 | | 0.153 | 0.218 | 2.373 | 2.645 | | | **6.893** |
| 2030 | | 0.086 | 0.011 | 1.435 | | 0.446 | 0.224 | 2.373 | 2.645 | | | **7.220** |
| 2031 | | | | 1.368 | | 0.106 | 0.231 | 2.373 | 2.645 | | | **6.723** |
| 2032 | | | | 1.374 | | 0.093 | 0.238 | 5.173 | 2.645 | | | **9.523** |
| 2033 | | | | 1.453 | | 0.045 | 0.244 | 2.373 | 2.645 | | | **6.760** |
| 2034 | | | | 1.724 | | 0.026 | 0.252 | 4.873 | 2.645 | | | **9.520** |
| 2035 | | | | 1.444 | | 0.026 | 0.259 | 4.873 | 2.645 | | | **9.247** |
| 2036 | | | | 1.505 | | 0.026 | 0.267 | 4.873 | 2.645 | | | **9.316** |
| 2037 | | 0.116 | 0.017 | 1.396 | | 0.016 | 0.275 | 8.348 | 2.645 | | | **12.813** |
| 2038 | | | | 1.382 | | 0.009 | | 8.480 | 2.645 | | | **12.516** |
| 2039 | | | | 1.337 | | 0.009 | | 9.410 | 2.645 | | | **13.401** |
| 2040 | | | | 1.372 | | 0.009 | | 3.049 | 1.939 | | | **6.369** |
| 2041 | | | | 1.363 | | 0.009 | | 5.349 | 0.571 | | | **7.292** |
| 2042 | | | | 1.433 | | | | 6.249 | | | | **7.682** |
| 2043 | | | | | | | | 10.100 | | | | **10.100** |
| 2044 | | | | | | | | 6.233 | | | | **6.233** |
| 2045 | | | | | | | | 8.133 | | | | **8.133** |
| 2046 | | | | | | | | 4.833 | | | | **4.833** |
| 2047 | | | | | | | | 5.900 | | | | **5.900** |
| 2048 | | | | | | | | 2.500 | | | | **2.500** |
| 2050 | | | | | | | | 0.500 | | | | **0.500** |
| 2053 | | | | | | | | 2.000 | | | | **2.000** |
| 2054 | | | | | | | | 6.300 | | | | **6.300** |
| 2057 | | | | 1.138 | | | | | | | | **1.138** |
| **Total** | **14.944** | **7.309** | **19.874** | **39.379** | **4.263** | **7.092** | **5.077** | **130.906** | **52.900** | **20.634** | **10.287** | **312.665** |

Source: PDMA, Eurobank Economic Research

## Central government debt as of March 2015

*Amounts in EURbn, percent of total & currency of denomination*

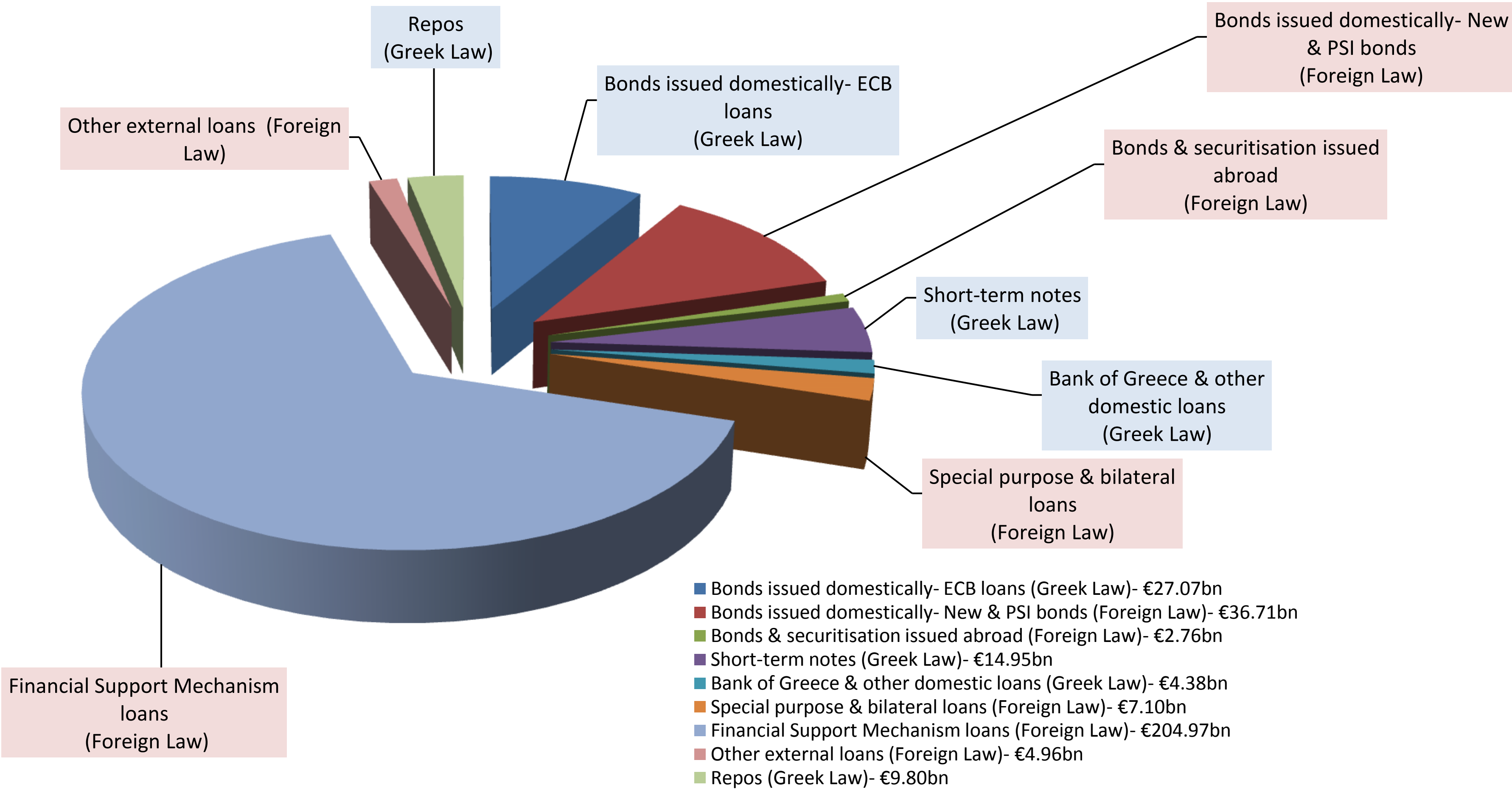



Source: MoF, PDMA, Eurobank Economic Research

## Central government debt as of March 2015 (EUR bn)

*Currently, c. 82% of central government debt is under foreign law*




Source: MoF, PDMA, Eurobank Economic Research

# VI. Appendix

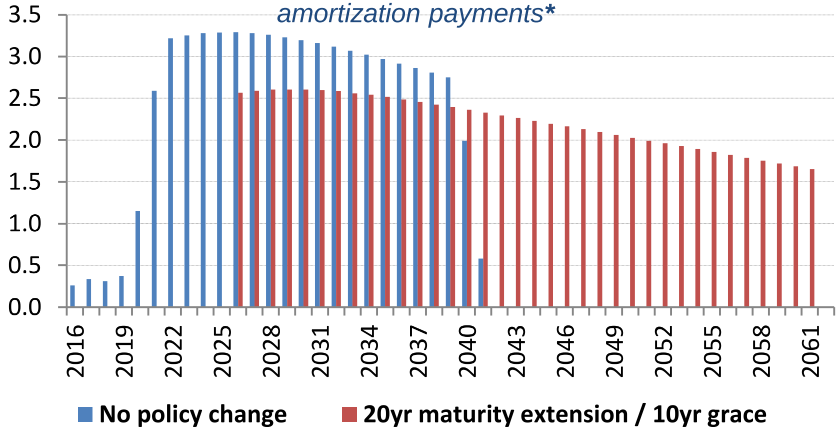
Eurobank

# "Soft" restructuring / debt re-profiling of EU loans under 1st, 2nd & 3rd programmes

*Impact on projected interest & amortization payments (in EUR bn)*

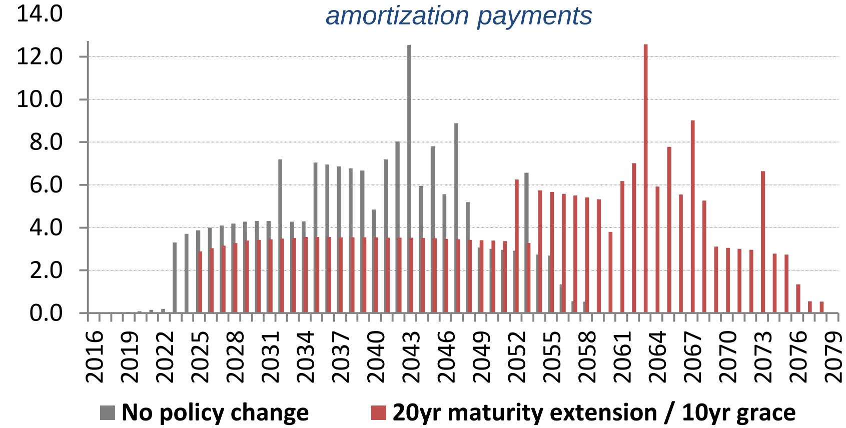
**GLF loans (1st programme)**

*20yr loan maturity extension & 10yr grace on interest and amortization payments**



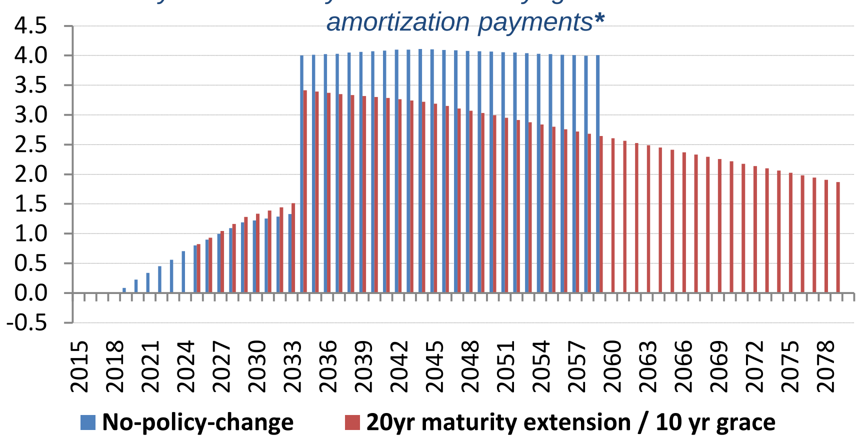

**EFSF loans (2nd programme)**

*20yr loan maturity extension & 10yr grace on interest and amortization payments*



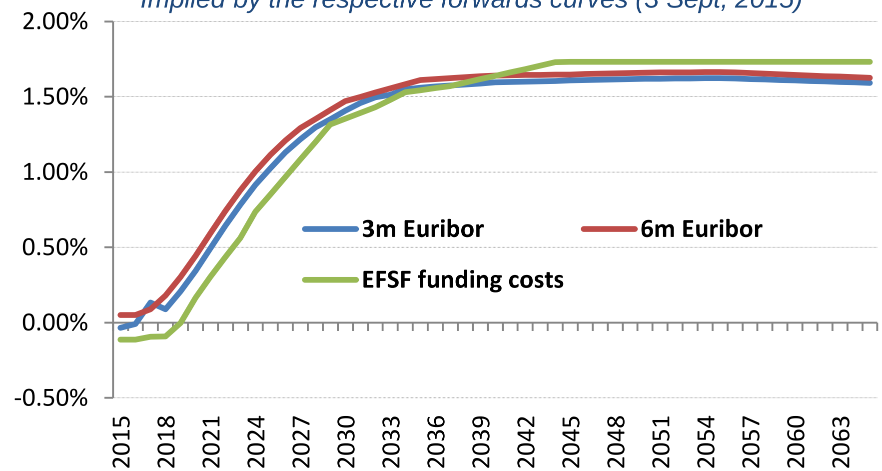

**ESM loans (3rd programme)**

*20yr loan maturity extension & 10yr grace on interest and amortization payments**




**Assumed funding interest rate curves**

*Implied by the respective forwards curves (3 Sept, 2015)***




Source: EC, EFSF, IMF, Eurobank Research

**DISCLAIMER**