Greece

State financing needs and sources in 2017 and beyond; evaluation of the agreed short-term debt relief measures & updated DSA

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January 2017

Foreword (*)

This study constitutes an update of a Eurobank Research piece titled *"Greece Evaluation of the agreed short-term relief measures & updated sustainability analysis of Greek public debt"* that was published in December 2016. It provides a detailed analysis of Greece's projected public borrowing needs and sources of financing in January 2017 to August 2018 and in the post-programme period up to the year 2060. Furthermore, it draws on the package of short-term debt relief measures endorsed at the Eurogroup of December 5, 2016 (as well as the debt relief framework agreed last May) to provide an updated sustainability analysis of Greek public debt under a range of alternative macro scenarios for the period 2017 to 2060. We believe that the analysis provides a useful framework for evaluating alternative strategies to make Greek public debt sustainable under the new operational definition of sustainability.

(*) see important disclaimer at the end of this document

Summary of views and key findings

- Greece's general government gross financing needs are projected to reach €16.9bn in 2017 and €9.6bn over the period January-August 2018, with the ensuing financing gap being comfortably covered by committed ESM financing under the present bailout. That is, assuming a swift resumption of official loan disbursements.
- The most challenging month of 2017 in terms of debt service costs is July, with respective amortization and interest payments expected to amount to c. €7.4bn (=€6.6bn bond and loan amortisations + €0.8bn interest payments). Average debt service payments over the rest of this year (excl. July) are projected at slightly less than €0.75bn per month.
- The abovementioned amounts suggest that State cash reserves should be adequate to cover interest and amortisation payments on public debt falling due over the first 4-5 months of 2017, even in the absence of new external financing from the official sector.
- Yet, a swift completion of the 2nd programme review without further significant delays is of crucial importance to prevent a renewed deterioration of domestic economic climate and maintain expectation for Greece's eventual inclusion in the ECB's quantitative easing program.
- Event in the absence of additional debt relief in the context of the medium-term measures agreed at the Eurogroup of May 25, 2016, the Hellenic Republic should be able to cover its projected funding gaps over the 5-year period following the completion of the present programme (2019-2023) through limited market borrowing (estimated at c. €7.5/annum on average).
- That is, assuming, inter alia, that: domestic economic growth broadly evolves in line the current baseline scenario; the present targets for the primary balance (3.5% of GDP) and privatization revenue over that period are maintained; and, crucially, Greece restores some market access before the termination of the present bailout programme.
- Required market access to cover projected funding gaps under the present baseline scenario will increase significantly in outer years (averaging more than €20bn/annum over the period 2023-2033, €50bn/annum in 2024-2043 and €80bn/annum or more thereafter), rendering Greece's fiscal position highly unsustainable under the present operational definition of sustainability.
- This could be addressed through lower interest rates on official loans and a further sizeable re-profiling of Greek debt service payments in the context of the relevant framework agreed at the 25 May 2016 Eurogroup.
- Besides being necessary for restoring debt sustainability, a more sizeable debt relief could accommodate a relaxation of the medium-term fiscal targets, allowing the Greek economy the necessary fiscal space to grow out of the current recession.

Part I

State borrowing needs & funding sources

January 2017 to August 2018 & post-programme period

Section I.1

State borrowing needs & funding sources

Period January 2017 to August 2018

State borrowing needs & sources of funding (EUR bn)
January 2017-August 2018

	FY-2017					FY-2018				
	Q1	Q2	Q3	Q4	FY-2017	Q1	Q2	July	August	Jan-Aug 2018
State cash primary balance [1] ("-" = surplus)	-1.0	1.7	-4.5	0.0	-3.8	-1.1	-1.1	-0.4	-0.4	-3.0
Interest payments	2.4	1.1	1.3	0.7	5.6	2.3	0.7	0.6	1.1	4.7
Amortization payments	0.2	2.2	7.1	0.2	9.7	0.7	0.8	2.4	0.0	3.9
Banking sector needs [2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parial unwinding of repo operations [3]	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0
Clearance of arrears [4]	1.7	0.0	1.8	0.0	3.5	1.0	1.0	0.0	0.0	2.0
I. Gross financing need	**3.3**	**5.0**	**5.7**	**3.0**	**16.9**	**2.9**	**1.4**	**4.6**	**0.7**	**9.6**
II. Gross financing source	**0.8**	**0.5**	**0.5**	**0.5**	**2.3**	**1.1**	**0.8**	**0.0**	**0.0**	**1.9**
Privatisation revenue [5]	0.5	0.5	0.5	0.5	2.0	0.8	0.8	0.0	0.0	1.6
Return to Greece of ANFA and SMP profits	0.3	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.3
III. Net financing need (I-II)	**2.5**	**4.5**	**5.2**	**2.5**	**14.6**	**1.8**	**0.6**	**4.6**	**0.7**	**7.7**
Official loan dispersements [6]	7.6	9.6	2.0	5.1	24.3	3.0	3.4	0.0	3.5	9.9
State deposit financing	-5.1	-5.1	3.2	-2.6	-9.7	-1.2	-2.8	4.6	-2.8	-2.2
Use of subsector deposits (repos)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IV. Financing gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Memo items										
Total State deposit stock e.o.p (assumed c. € 3bn at end-2016)	*8.1*	*13.2*	*10.0*	*12.7*	*12.7*	*13.9*	*16.7*	*12.1*	*14.9*	*14.9*

(*) Table assumes rollover of full amount of T-bills oustanding (c. €15bn currently)

1/ Assumptions for FY-2017 in line with 2017 Budget; assumptions for 2018 in line with EC compliance report (June 2016)

2/ Table assumes no need for any new bank recapitalisations

3/ & 4/ Eurobank Research assumptions

5/ Revenues assumed for FY-2017 in line with 2017 Budget; assumptions for 2018 in line with EC compliance report (June 2016)

6/ Timeline of official loan disbursements assumed to be in line with the EC compliance report (June 2016); €6.1bn loan tranche of 2nd programme review assumed to be disbursed in Q1 2017

Source: PDMA, Greek budget 2017, EC (June 2016); Eurobank Research

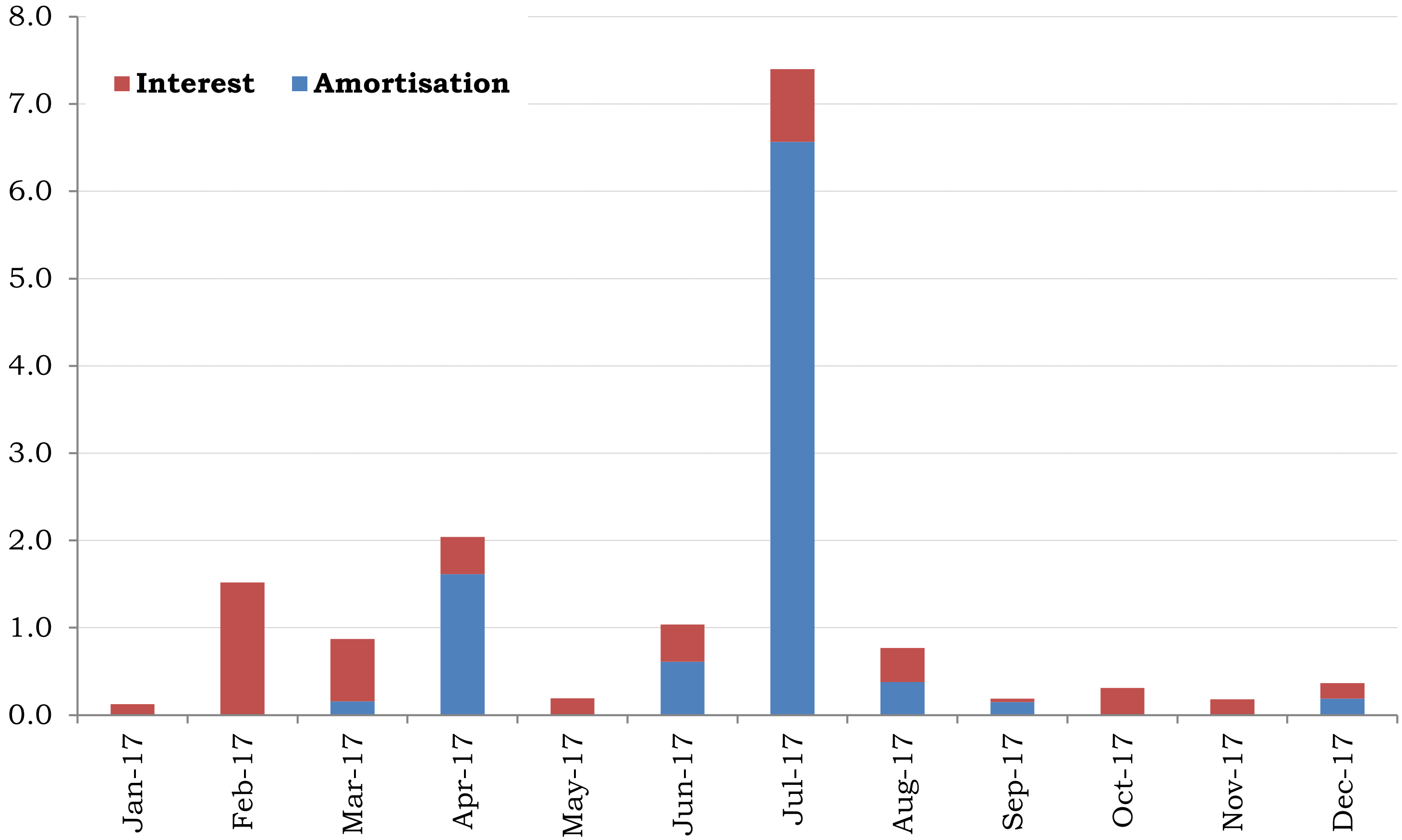
Breakdown of monthly amortization payments in 2017 (EUR bn)

	NCBs (ANFA)	*ECB (SMP)*	*Old GGBs (holdouts)*	*GGBs issued in 2014*	**Bonds (total)**	**BoG loans**	**Special purpose & bilateral international loans (EIB)**	**Other loans**	**EFSF loans**	**GLF loans**	**IMF loans**	**ESM loans (3rd bailout)**	**Total**
Jan-17													
Feb-17				*0.005*	0.005								**0.0**
Mar-17							0.01				0.15		**0.2**
Apr-17	*0.17*	*1.23*			1.40			0.21					**1.6**
May-17													
Jun-17						0.47	0.14						**0.6**
Jul-17	*1.46*	*2.42*	*0.20*	*2.09*	6.16		0.11				0.30		**6.6**
Aug-17			*0.38*		0.38		0.00						**0.4**
Sep-17							0.004				0.15		**0.1**
Oct-17													
Nov-17													
Dec-17							0.03				0.16		**0.2**
Total	*1.62*	*3.66*	*0.57*	*2.09*	**7.95**	**0.47**	**0.30**	**0.21**			**0.75**		**9.7**

(*) Table excludes T-bill maturities (full rollover assumed) & any partial unwinding of repo operations (inter-governmental borrowing)

Source: PDMA, Greek budget 2017, EC (June 2016); Eurobank Research

Interest & amortisation payments on public debt in 2017 (EUR bn)



Source: PDMA, Greek budget 2017, EC (June 2016); Eurobank Research

Section I.2

State borrowing needs & funding sources

Post-programme period

No policy change/ no medium-term relief scenario

Post-programme State financing needs & sources (EUR bn)
No policy change / no medium-term debt relief scenario (*)

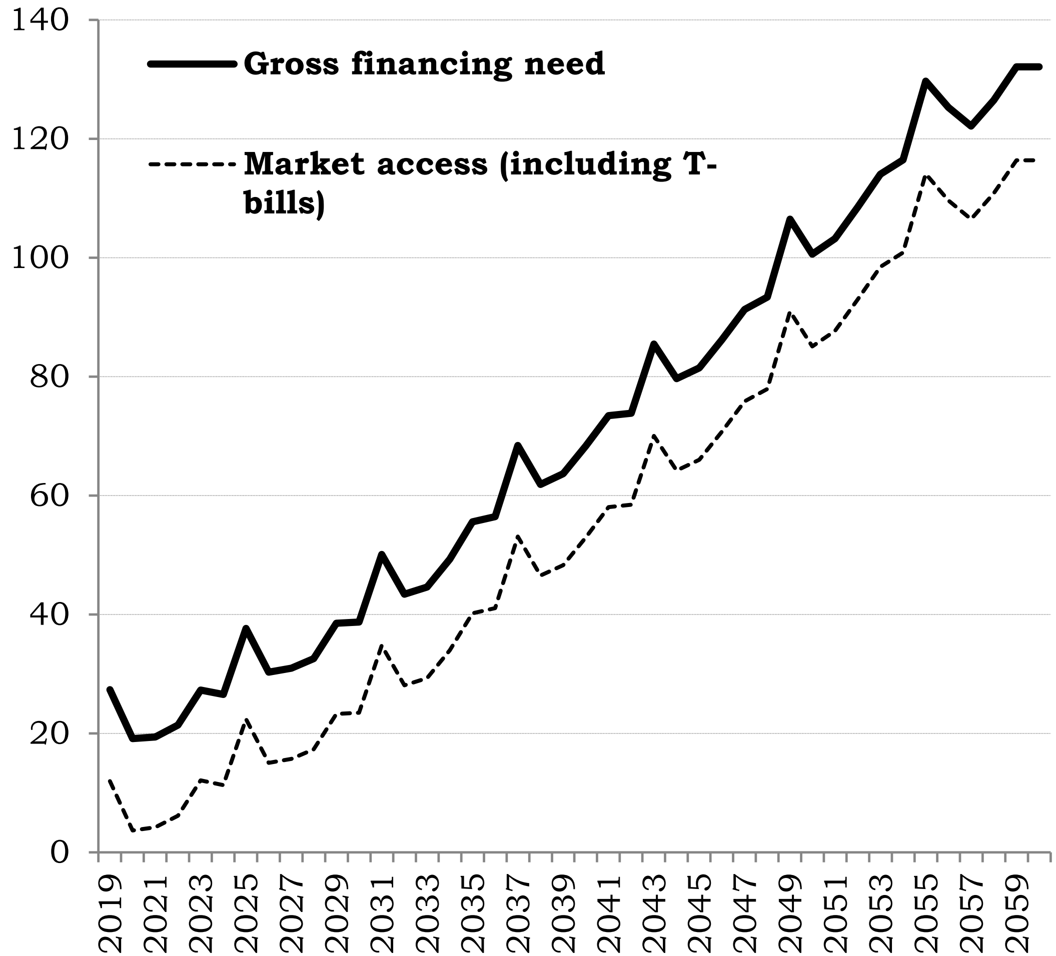
	Gross financing need						Gross financing source				Funding gap
	General government primary surplus ("-" = surplus)	Amortisation payments on public debt (including T-bills)		Interest payments on public debt			Privatisation revenue (-)	Market access			
		Oustanding amounts as of January 2017	Incremental payments on post-programme market debt	Oustanding amounts as of January 2017	Incremental payments on post-programme market debt			Short-term (T-bills)	Government notes and bonds		
2019	-6.9	28.6		5.6		**27.4**	0.4	15.0	12.0	**27.4**	**0.0**
2020	-7.2	20.1		5.7	0.5	**19.1**	0.4	15.0	3.7	**19.1**	**0.0**
2021	-7.4	20.2		6.0	0.6	**19.4**	0.2	15.0	4.2	**19.4**	**0.0**
2022	-7.7	21.9		6.3	0.8	**21.4**	0.2	15.0	6.2	**21.4**	**0.0**
2023	-7.9	24.1		10.0	1.1	**27.3**	0.2	15.0	12.1	**27.3**	**0.0**
2024	-8.2	23.9		9.2	1.6	**26.6**	0.2	15.0	11.3	**26.5**	**0.0**
2025	-8.5	22.3	12.0	9.7	2.2	**37.6**	0.2	15.0	22.4	**37.6**	**0.0**
2026	-8.8	23.0	3.7	9.7	2.7	**30.3**	0.3	15.0	15.0	**30.3**	**0.0**
2027	-9.1	23.0	4.2	9.7	3.2	**31.0**	0.3	15.0	15.7	**31.0**	**0.0**
2028	-9.4	22.4	6.2	9.6	3.8	**32.6**	0.3	15.0	17.3	**32.6**	**0.0**
2029	-9.3	21.8	12.1	9.6	4.3	**38.5**	0.3	15.0	23.3	**38.5**	**0.0**
2030	-9.1	22.1	11.3	9.7	4.7	**38.7**	0.3	15.0	23.5	**38.7**	**0.0**
2031	-8.9	21.6	22.4	9.6	5.3	**50.1**	0.3	15.0	34.8	**50.1**	**0.0**
2032	-8.7	21.6	15.0	9.7	5.8	**43.4**	0.3	15.0	28.1	**43.4**	**0.0**
2033	-8.4	21.7	15.7	9.3	6.3	**44.6**	0.3	15.0	29.3	**44.6**	**0.0**
2034	-8.1	24.2	17.3	9.0	6.9	**49.3**	0.3	15.0	34.0	**49.3**	**0.0**
2035	-7.8	24.0	23.3	8.6	7.5	**55.6**	0.3	15.0	40.2	**55.6**	**0.0**
2036	-7.5	24.0	23.5	8.2	8.2	**56.4**	0.3	15.0	41.1	**56.4**	**0.0**
2037	-7.1	24.0	34.8	7.8	8.9	**68.4**	0.4	15.0	53.1	**68.4**	**0.0**
2038	-6.8	23.6	28.1	7.3	9.6	**61.9**	0.4	15.0	46.5	**61.9**	**0.0**
2039	-6.3	23.6	29.3	6.8	10.3	**63.7**	0.4	15.0	48.3	**63.7**	**0.0**
2040	-5.9	22.9	34.0	6.3	11.1	**68.4**	0.4	15.0	53.0	**68.4**	**0.0**
2041	-6.1	21.5	40.2	6.0	11.8	**73.4**	0.4	15.0	58.0	**73.4**	**0.0**
2042	-6.3	21.0	41.1	5.6	12.4	**73.8**	0.4	15.0	58.4	**73.8**	**0.0**
2043	-6.5	20.7	53.1	5.1	13.1	**85.5**	0.4	15.0	70.1	**85.5**	**0.0**
2044	-6.7	21.5	46.5	4.6	13.7	**79.6**	0.4	15.0	64.2	**79.6**	**0.0**
2045	-6.9	21.5	48.3	4.3	14.3	**81.5**	0.5	15.0	66.0	**81.5**	**0.0**
2046	-7.1	21.6	53.0	3.9	14.9	**86.2**	0.5	15.0	70.8	**86.2**	**0.0**
2047	-7.3	21.5	58.0	3.6	15.5	**91.3**	0.5	15.0	75.8	**91.3**	**0.0**
2048	-7.6	23.2	58.4	3.3	16.1	**93.4**	0.5	15.0	77.9	**93.4**	**0.0**
2049	-7.8	24.4	70.1	3.1	16.7	**106.5**	0.5	15.0	91.0	**106.5**	**0.0**
2050	-8.0	24.1	64.2	3.0	17.4	**100.6**	0.5	15.0	85.1	**100.6**	**0.0**
2051	-8.3	24.6	66.0	2.9	18.0	**103.2**	0.5	15.0	87.7	**103.2**	**0.0**
2052	-8.6	24.7	70.8	2.8	18.8	**108.5**	0.6	15.0	93.0	**108.5**	**0.0**
2053	-8.8	24.8	75.8	2.7	19.5	**114.1**	0.6	15.0	98.5	**114.1**	**0.0**
2054	-9.1	24.8	77.9	2.5	20.3	**116.5**	0.6	15.0	100.9	**116.5**	**0.0**
2055	-9.4	24.8	91.0	2.2	21.2	**129.7**	0.6	15.0	114.1	**129.7**	**0.0**
2056	-9.7	25.8	85.1	2.1	22.0	**125.3**	0.6	15.0	109.6	**125.3**	**0.0**
2057	-10.0	19.5	87.7	2.0	22.9	**122.1**	0.7	15.0	106.5	**122.1**	**0.0**
2058	-10.3	18.4	93.0	1.9	23.7	**126.5**	0.7	15.0	110.8	**126.5**	**0.0**
2059	-10.7	18.4	98.5	1.6	24.3	**132.1**	0.7	15.0	116.4	**132.1**	**0.0**
2060	-11.0	16.1	100.9	1.1	25.0	**132.1**	0.7	15.0	116.4	**132.1**	**0.0**

(*) See next page for underlying assumptions

Source: PDMA, Greek budget 2017, EC (June 2016); Eurobank Research

State financing need & required market access to close funding gap (EURbn)

No policy change / no medium-term debt relief scenario



Underlying assumptions
(broadly in line with the EC's latest compliance report (*))

Medium-/long-term real GDP (%)	1.5% after 2021 & 1.25% after 2030
General government primary suplus (% GDP)	3.5% for 10 years post-programme completion & decreasing gradually to 1.5% by 2040
Privatization revenue	€18 bn
Average market refinancing rate (%) post-programme	5.0%
Market refinancing assumed to take place through issuance of	6-year fixed coupon bonds
Other assumptions	Broadly in line with the EC's DSA (June 2016)

(*) "Compliance Report, The Third Economic Adjustment Programme for Greece, First Review", European Commission, June 2016

Source: PDMA, Greek budget 2017, EC (June 2016); Eurobank Research

Multi-year amortisation payments on public debt (EUR bn)

Outstanding amounts on 10 January 2017

	T-bills (€14.94bn outstanding)	NCBs (ANFA)	ECB (SMP)	Other bonds	BoG loans	Special purpose & bilateral international loans (EIB)	Other international loans	EFSF loans re-profiled	GLF loans	IMF loans	Repos (€11.9bn outstanding)	ESM loans (all disbursements assumed to reach €64.8bn by late 2018)	Total excluding T-bills & partial unwinding of repo operations
2017	15.0	1.6	3.7	2.7	0.5	0.3	0.2	0.0	0.0	0.7	2.0	0.0	**9.6**
2018	15.0	0.6	1.3	0.0	0.5	0.3	0.2	0.0	0.0	1.8	2.0	0.0	**4.6**
2019	15.0	1.0	4.8	4.8	0.5	0.3	0.2	0.0	0.0	2.0		0.0	**13.6**
2020	15.0	0.2	1.1		0.5	0.3	0.2	0.0	0.7	2.0		0.0	**5.1**
2021	15.0				0.5	0.4	0.2	0.0	2.1	2.0		0.0	**5.2**
2022	15.0	0.8	0.5	0.0	0.5	0.4	0.2	0.0	2.6	1.9		0.0	**6.9**
2023	15.0			1.8	0.5	0.4	0.2	2.3	2.6	1.3		0.0	**9.1**
2024	15.0	0.2	1.1	1.8		0.4	0.2	2.3	2.6	0.3		0.0	**8.9**
2025	15.0	0.1		1.7		0.4	0.2	2.3	2.6			0.0	**7.3**
2026	15.0	0.2	0.7	1.5		0.4	0.2	2.3	2.6			0.0	**8.0**
2027	15.0			1.5		1.4	0.2	2.3	2.6			0.0	**8.0**
2028	15.0			1.7		0.5	0.2	2.3	2.6			0.0	**7.4**
2029	15.0			1.5		0.2	0.2	2.3	2.6			0.0	**6.8**
2030	15.0	0.1	0.0	1.4		0.4	0.2	2.3	2.6			0.0	**7.1**
2031	15.0			1.4		0.1	0.2	2.3	2.6			0.0	**6.6**
2032	15.0			1.4		0.1	0.2	2.3	2.6			0.0	**6.6**
2033	15.0			1.5		0.0	0.2	2.3	2.6			0.0	**6.7**
2034	15.0			1.7		0.0	0.3	2.3	2.6			2.3	**9.2**
2035	15.0			1.4		0.0	0.3	2.3	2.6			2.3	**9.0**
2036	15.0			1.5		0.0	0.3	2.3	2.6			2.3	**9.0**
2037	15.0	0.1	0.0	1.4		0.0	0.3	2.3	2.6			2.3	**9.0**
2038	15.0			1.4		0.0		2.3	2.6			2.3	**8.6**
2039	15.0			1.3		0.0		2.3	2.6			2.3	**8.6**
2040	15.0			1.4		0.0		2.3	1.9			2.3	**7.9**
2041	15.0			1.4		0.0		2.3	0.6			2.3	**6.5**
2042	15.0			1.4				2.3				2.3	**6.0**
2043	15.0							3.4				2.3	**5.7**
2044	15.0							4.2				2.3	**6.5**
2045	15.0							4.2				2.3	**6.5**
2046	15.0							4.3				2.3	**6.6**
2047	15.0							4.2				2.3	**6.5**
2048	15.0							5.9				2.3	**8.2**
2049	15.0							7.2				2.3	**9.4**
2050	15.0							6.8				2.3	**9.1**
2051	15.0							7.3				2.3	**9.6**
2052	15.0							7.5				2.3	**9.7**
2053	15.0							7.6				2.3	**9.8**
2054	15.0							7.6				2.3	**9.8**
2055	15.0							7.6				2.3	**9.8**
2056	15.0							7.5				3.4	**10.8**
2057	15.0			1.1				0.0				3.4	**4.5**
2058	15.0											3.4	**3.4**
2059	15.0											3.4	**3.4**
2060	15.0											1.1	**1.1**
Total	**660.0**	**4.9**	**13.2**	**38.8**	**3.3**	**6.5**	**4.4**	**130.9**	**52.9**	**12.1**	**4.0**	**64.8**	**331.9**

Source: PDMA, Greek budget 2017, EC (June 2016); Eurobank Research

Part II

Short-term debt relief

Projected stock and cash-flow impact

Debt relief framework for Greece
Eurogroup of May 25, 2015 (*)

- On 25th of May, the Eurogroup elaborated further on the general guidelines for debt relief for Greece agreed at the Eurogroup of May 9, 2016.

- In more detail, an agreement was reached on a package of measures that would be subject to the pre-defined conditionality of the ESM programme and be phased in progressively so as to ensure that Greek public debt remains sustainable under the new operational definition of sustainability.

- The latter requires Greece's annual government gross financing need to be *no higher than*:
  - 15% of GDP during the post-programme period for the medium-term (until 2040); and
  - 20% of GDP in outer years (i.e., over the period 2041-2060).

- One of the most important elements of the May 25 Eurogroup agreement was that a decision to provide more substantial debt relief has been postponed for after the completion of the current programme (mid 2018) and upon the full implementation of the underlying conditionality.

- Arguably, this is because the funding commitments of the present programme are deemed to be adequate to cover Greece's borrowing needs over the entire programme horizon (August 2015-August 2018).

(*) An analysis of the debt relief framework agreed at the May 24th Eurogroup can be found in the Appendix

Short-term debt relief package for Greece
Approved at the Eurogroup of December 5, 2016

Eurobank

I. Smoothening of the EFSF repayment profile

Description: 4-year extension in the weighted average maturity of EFSF loans provided to Greece in the context of the 2nd bailout programme.
Objective: reduce refinancing risks for the Greek state, by back-loading EFSF loan amortizations and creating a much lighter (and smoother) redemptions profile over the next two decades or so.
Impact (FY-2060): -3.6ppts and -0.8ppts respective reductions in public debt and GFN ratios.

II. Use of the EFSF/ESM funding strategy to reduce interest rate risk

Scheme 1 - Issuance of long-term fixed rate notes and bonds to the market with maturities up to 30 years, with a view to fund the repurchase of floating rate notes held by Greece's four systemic banks.
Impact (FY-2060): -7.1ppts and -1.6ppts respective reductions in public debt and GFN ratios.

Scheme 2 - Use of interest rate swaps to mitigate the risk of higher market rates, with the ensuing benefits to Greece from a sustainability standpoint varying with maturity, the rate and the size of the swap transactions that can be executed in the market.
Impact (FY-2060): -6.9ppts and -1.5ppts respective reductions in public debt and GFN ratios.

Scheme 3 - Use of matched funding, via ESM fixed rate long-term issuances with maturities up to 30 years, for part of future disbursements to Greece under the current programme (c. €30bn).
Impact (FY-2060): -1.3ppts and -0.3ppts respective reductions in public debt and GFN ratios.

III. Waiver of the step-up interest rate margin on the DBB tranche

Description: waiver of the step-up interest rate margin related to the debt buy-back tranche (€11.3bn) released in the context of the 2nd bailout programme.
Impact (FY-2060): -0.3ppts and -0.1ppts respective reductions in public debt and GFN ratios.

Total projected impact of measures I., II, & III. (FY-2060): -21.8ppts and -4.9ppts respective reductions in public debt and GFN ratios.

Short-term debt relief package for Greece
Stock & cash-flow impact (ESM projections)

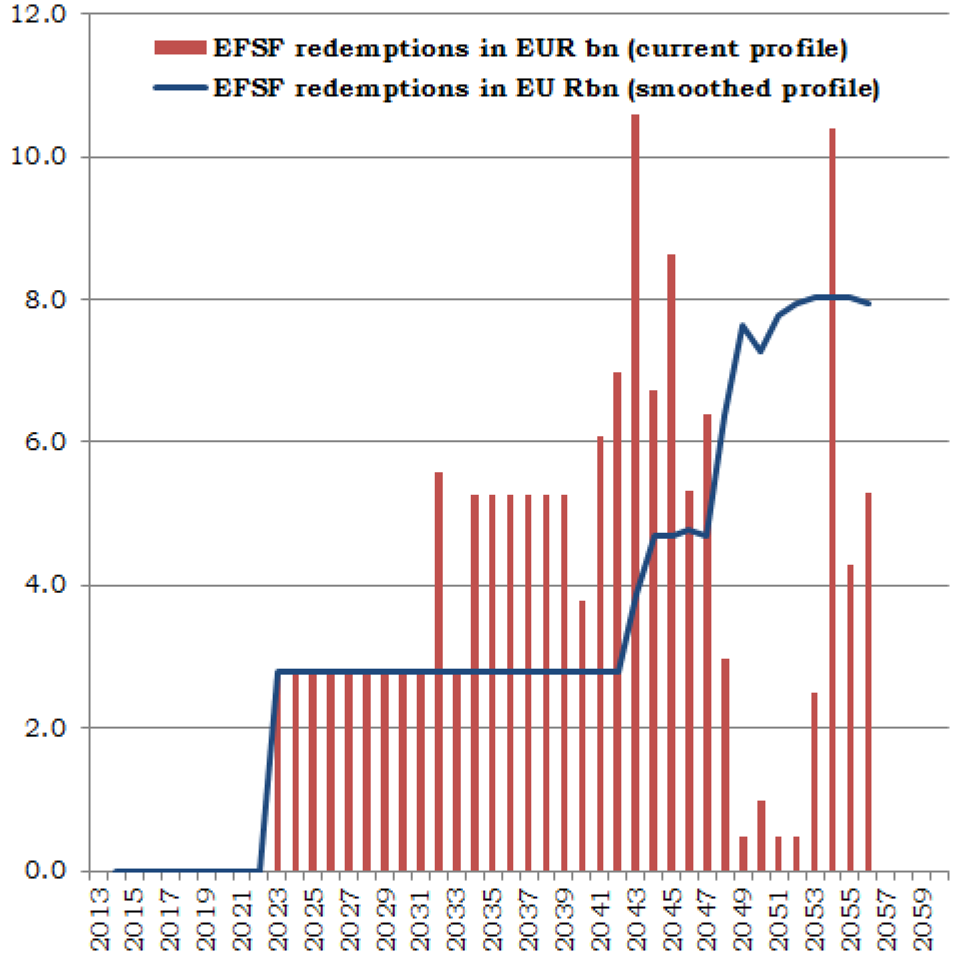
Table 1. Impact of short - term relief measures on Dept - to GDP and GFN - to - GDP ratios under baseline scenario

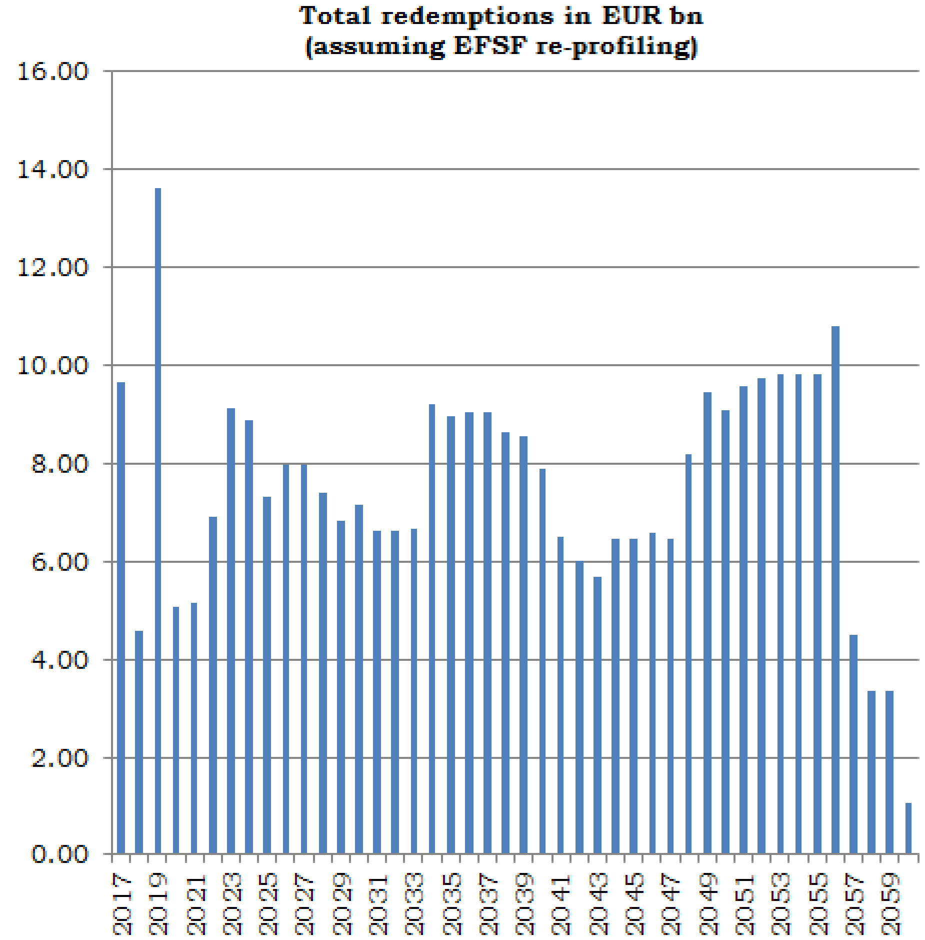
Greece, DSA (central scenario)

		2016	2017	2018	2019	2020	2022	2030	2040	2050	2060
Dept - to GDP	1. Smoothening the ESM repayment profile under the current WAM	0.0	0.0	0.0	0.0	0.0	0.0	-0.4	-1.0	-2.4	-3.6
	2. Use EFSF/ ESM diversified funding strategy										
	i. BtB extension	0.0	0.0	0.1	0.2	0.2	0.2	-1.2	-3.7	-5.7	-7.1
	ii. ESM, interest rate swap (IRS)	0.0	0.0	0.1	0.2	0.3	0.4	-0.4	-2.9	-5.1	-6.9
	iii. Split of the pool with matched funding (ESM)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.4	-1.1	-1.3
	3. Walver of the step-up in interest rate margin (DBB) , 2017	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3
	Second round effect on market rates	0.0	0.0	0.1	0.0	0.0	-0.1	-0.4	-1.0	-1.8	-2.6
GFN - to GDP	1. Smoothening the ESM repayment profile under the current WAM	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-1.3	-0.8	-0.8
	2. Use EFSF/ ESM diversified funding strategy										
	i. BtB extension	0.0	0.0	0.0	0.0	0.0	0.0	-0.4	-0.9	-1.2	-1.6
	ii. ESM, interest rate swap (IRS)	0.0	0.0	0.1	0.1	0.1	0.1	-0.2	-0.7	-1.2	-1.5
	iii. Split of the pool with matched funding (ESM)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	-0.3	-0.3
	3. Walver of the step-up in interest rate margin (DBB) , 2017	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
	Second round effect on market rates	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.3	-0.4	-0.6

Source: ESM, EUROGROUP (Dec 5, 2016)

Impact of EFSF loans re-profiling



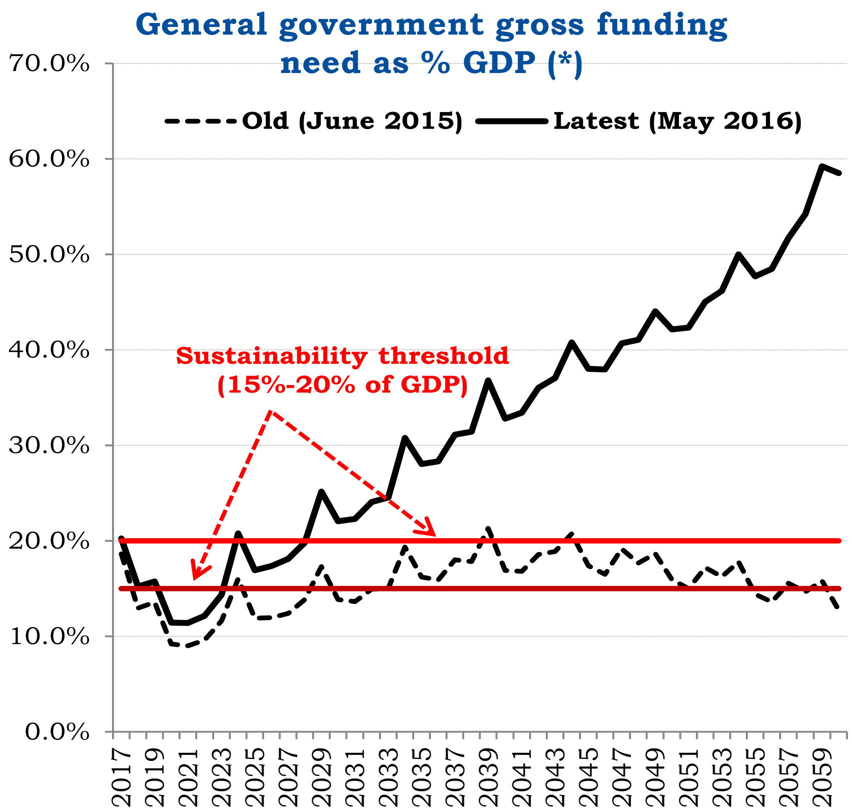


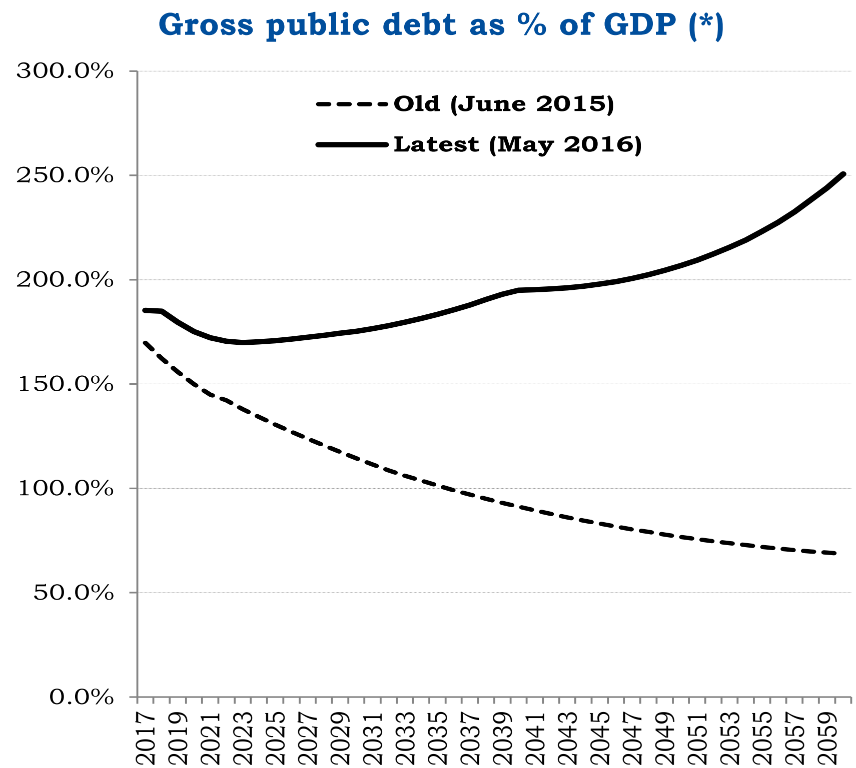
Source: ESM, EUROGROUP (Dec 5, 2016), Eurobank Research

Part III
Greek public debt sustainability
Scenario analysis

The IMF's view

Greek public debt highly unsustainable without further significant relief





IMF baseline DSA for Greece - Old (June 2015)

Key assumptions

- Long-term real GDP growth: 1.5%
- Long-term GDP deflator inflation: 2.0%
- Primary fiscal balance (2018 onwards): 3.5% of GDP
- Privatization revenue: €20bn

IMF baseline DSA for Greece – Latest (May 2016)

Key assumptions

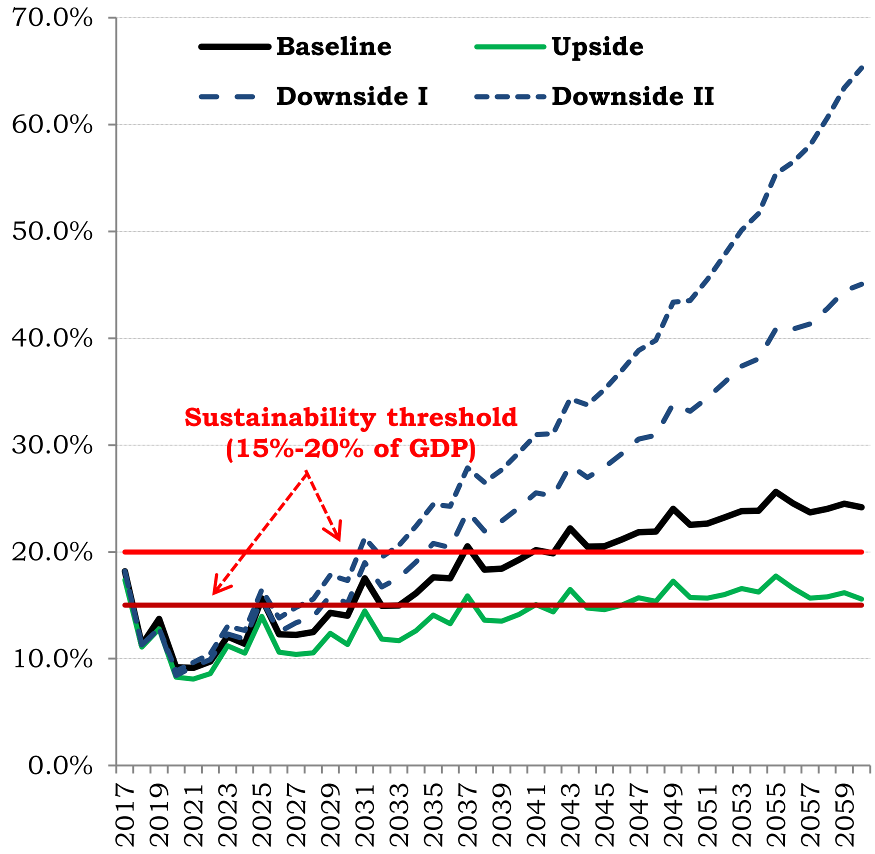
- Long term real GDP growth: 1.2%
- Long term GDP deflator inflation: 1.9%
- Primary fiscal balance (2018 onwards): 1.5% of GDP
- €10bn set aside to cover any new bank recap needs
- Privatization revenue: €20bn
- Market refinancing rates: c. 6.0% in 2019 and increasing/decreasing afterwards by 4bps per 1ppt increase/decline in debt ratio

(*) The projected paths for Greece's public debt and GFN ratios are based on (i) some of the key underlying assumptions used in the IMF DSAs published in June 2015 and May 2016; and (ii) our own assumptions about Greek debt refinancing conditions in the post-programme period. For simplicity, we assume that market refinancing is conducted through the issuance of 5-year fixed coupon bonds

Source: IMF (June 2015 & May 2016), Eurobank Economic Research

The view of the EU institutions
Serious concerns regarding Greek debt sustainability

General government gross funding needs as % of GDP (*)



(*) A more detailed presentation of the underlying assumptions is provided in Appendix

Excerpt from the EC's compliance report (**)

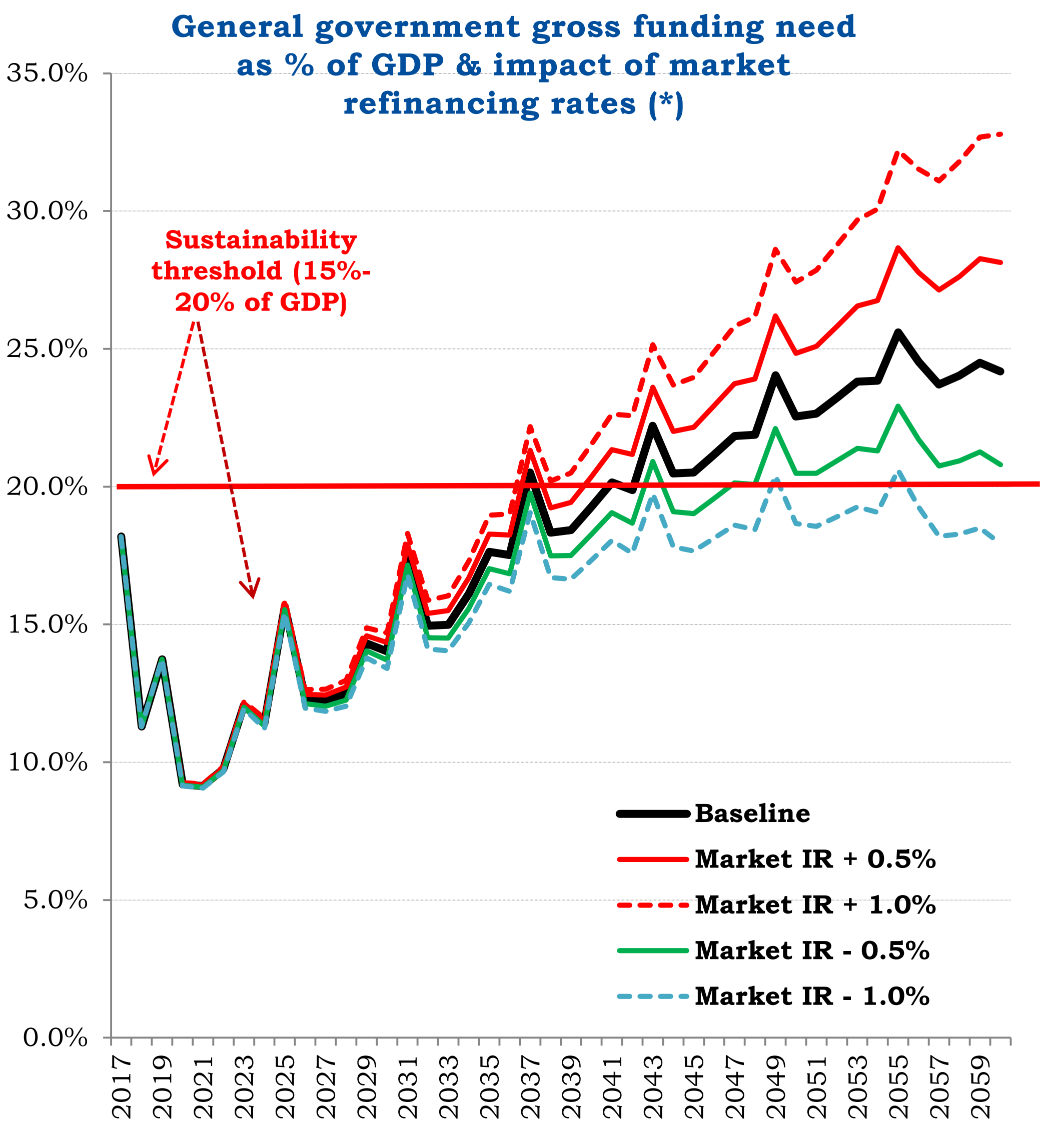
"The high debt-to-GDP and gross financing needs resulting from this analysis point to serious concerns regarding the sustainability of Greece's public debt. The concerns shall be addressed through the implementation of the far-reaching and credible reform programme contained in the supplemental MoU, very strong ownership of the Greek authorities for this programme and debt-mitigating measures granted on full implementation of conditionality measures agreed in the context of the ESM programme. An appropriate and phased combination of debt management measures (including locking in of current low levels of interest rates), extension of maturities and grace periods for principals and interest, plus the use of SMP and ANFA equivalent profits would allow to bring Greek debt back to a sustainable level in gross financing needs terms without the need for a nominal haircut."

(**) Compliance Report, The Third Economic Adjustment Programme for Greece, First Review", European Commission, June 2016

Source: EC (June 2016), Eurobank Economic Research

Greece: evolution of gross financing needs

Scenarios for market refinancing rates



(*) Scenario analysis assumes parallel shift of market rates for refinancing Greek public debt by 0.5pp, 1.0pp, -0.5pp and -1.0pp, respectively vs. baseline

Baseline scenario underlying assumptions
(broadly in line with the EC's latest compliance report (*))

Medium-/long-term real GDP (%)	1.5% after 2021 & 1.25% after 2030
General government primary suplus (% GDP)	3.5% for 10 years post-programme completion & decreasing gradually to 1.5% by 2040
Privatization revenue	€18 bn
Average market refinancing rate (%) post-programme	5.0%
Market refinancing assumed to take place through issuance of	6-year fixed coupon bonds
Other assumptions	Broadly in line with the EC's DSA (June 2016)

(*) "Compliance Report, The Third Economic Adjustment Programme for Greece, First Review", European Commission, June 2016

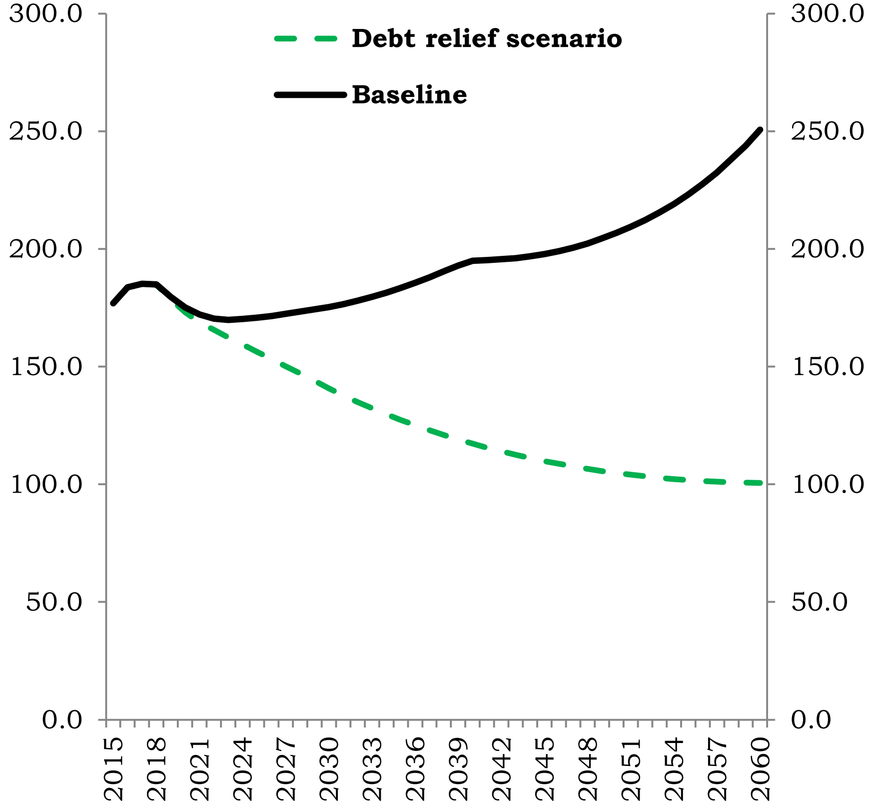
Source: EC (June 2016), Eurobank Economic Research

Part IV
Medium-term debt restructuring strategies

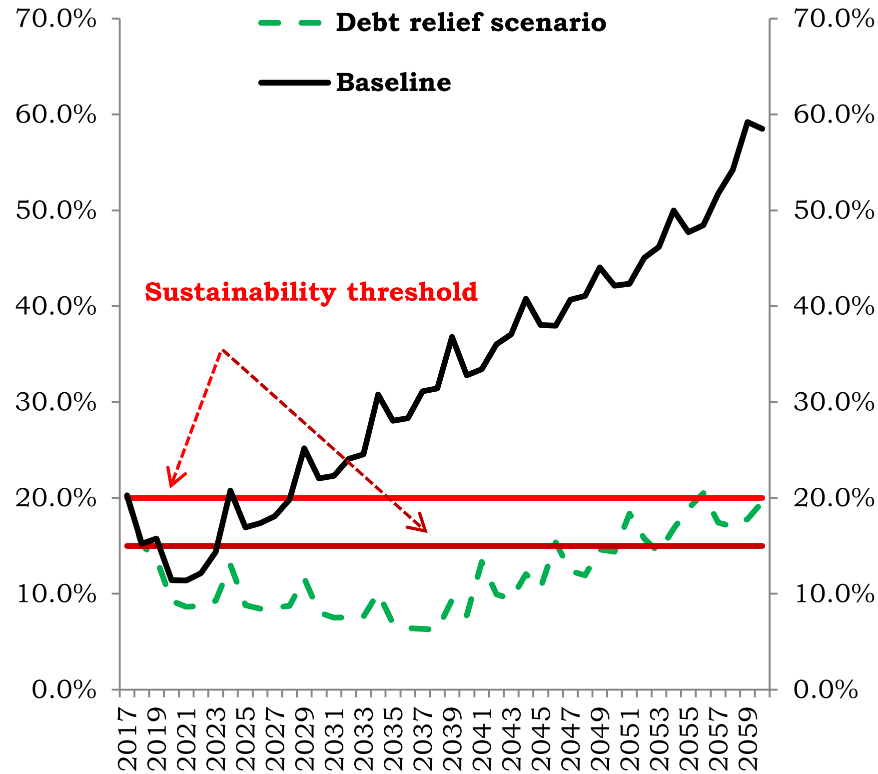
A hypothetical medium-term relief package (*)

to reinforce Greek public debt sustainability

GFN as % of GDP & impact of medium-term debt relief (*)



Gross public debt as % of GDP & impact of medium-term debt relief (*)



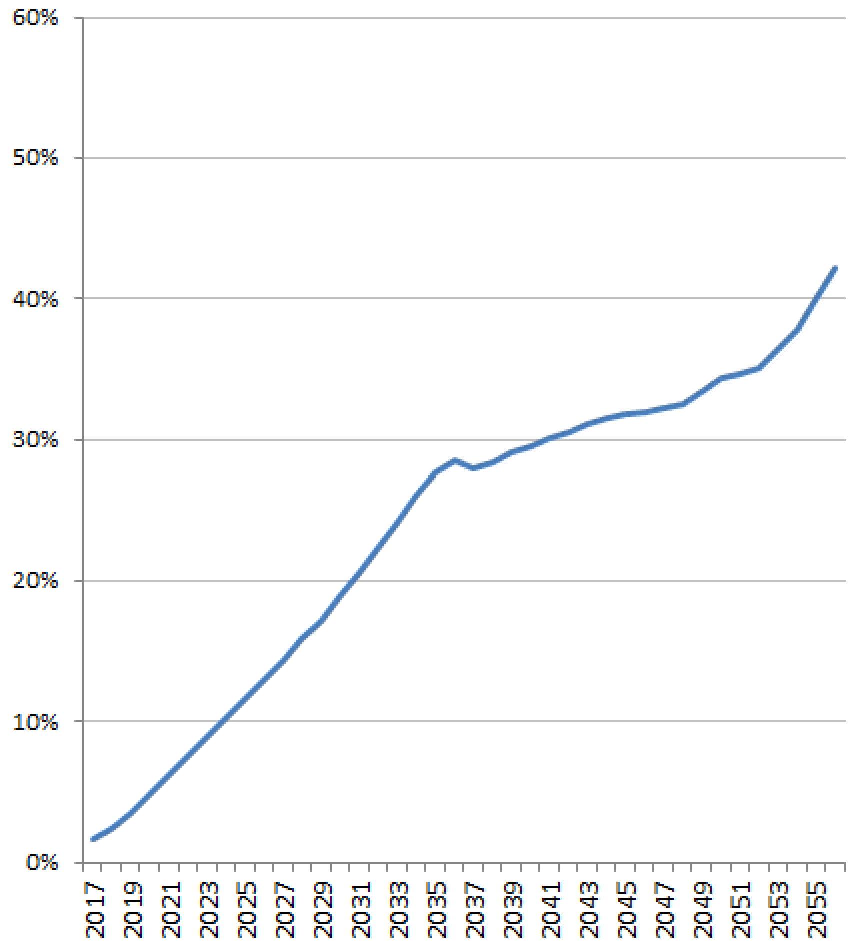
(*) Assumed debt restructuring (OSI) modalities

- For demonstration, baseline scenario is assumed to be in line with the IMF's latest DSA (May 2016)
- Debt restructuring takes place after completion of current programme (mid 2018)
- GLF loan maturity extension (30 yrs) along with longer deferrals on interest and principal payments (by 21 & 20 yrs, respectively)
- EFSF loan maturity extension (14 yrs) along with longer deferrals on interest and principal payments (by 20 & 17 yrs, respectively)
- ESM loan maturity extension (10 yrs) along with longer deferrals on interest and principal (by 19 & 6 yrs, respectively)
- Interest on deferred interest assumed to accrue at a fixed rate of 1½ % per year until 2040 and a long-run official rate of 3.8% afterwards
- Return of ANFA and SMP profits: €1.8bn pending from 2014 plus profits accrued from 2019 onwards

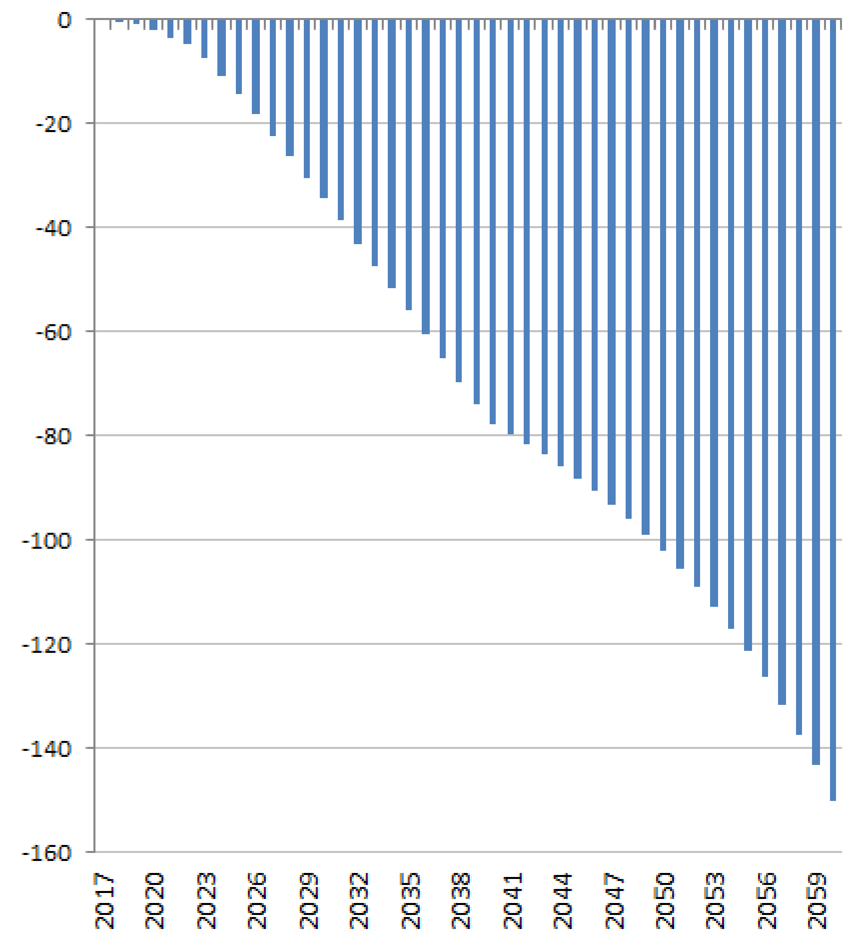
Source: IMF (May 2016), Eurobank Economic Research

Greece: cash flow & stock relief due to debt re-profiling (% of GDP)

Cash flow relief
Time evolution of NPV savings as % of GDP (*)
from t_0 = 2017 to T = 2060
Baseline vs. debt relief scenario (**)



Stock relief
Decline of debt to GDP ratio due to debt re-profiling
Baseline Vs. debt relief scenario (**)



(*) Discount rate for NPV calculation assumed at 3%
(**) Modalities of *baseline* and *debt relief scenario similar to these assumed in the previous page*

Source: IMF (May 2016), Eurobank Economic Research

Part V

QE for Greece

Estimating the potential size of PSPP purchases

PSPP: scope & modalities

European Central Bank Decision (EU) 2015/774

- ✓ *For a euro area member state that is under a financial assistance program (and for which a waiver on the required credit quality threshold has been granted), eligibility for PSPP purchases should be suspended during a program review and resume only in the event of its successful completion*
- ✓ *The period of purchases under the PSPP is generally limited to two months following the successful completion of a review. That is, unless there are exceptional circumstances justifying a suspension of purchases before or a continuation of purchases after this period and until the start of the next review*
- ✓ *All other PSPP modalities as regards eligibility criteria, purchase eligibility limits and allocation of portfolios are the same for both program and non-program euro area countries*
- ✓ Restrictions to be taken into account when estimating the potential size of marketable debt that can be purchased by the ECB and NCBs of the euro area:
  - security-specific limit of 33% (notional terms)
  - issuer-specific limit of 33% (notional terms)
  - 1-yr ≤ eligible security tenor (remaining maturity) ≤ 30-yrs plus 364 days

Estimating the potential size of Greek debt that can be purchased by the Eurosystem

- ✓ the monthly notional amount of Greek debt that could be purchased (after Mar. 2017) should not exceed €1.57bn (=2.9055% x 90% x €60bn), or c. €2.24bn in prevailing market prices, where:
  - 2.9055% is Bank of Greece's subscription key in the ECB capital;
  - 90% is the share of PSPP purchases of securities issued by eligible central governments and recognized agencies; and
  - €60 bn is the amount of combined (average) monthly purchases under PSPP
  - The maximum *cumulative* amount of Greek securities (in notional terms) that could be purchased is between €3bn and €4bn

Source: ECB

Greece: impact from inclusion in the PSPP

Purchases equivalent to over a year's worth of the daily trading volume in GGBs

Eurobank

Evolution of cumulative purchases of eligible Greek debt under PSPP (in EUR bn)

Maximum purchases limit could be attained over a period of at least two months

	PSI & post-PSI bonds (eligible oustanding amount)	**Public enterprices** (eligible outstanding amount)	**SMP bonds** (eligible outstanding amount)	**ANFA bonds** (eligible outstanding amount)	**Total eligible amount**	**of which, ECB and euro area NCB holdings**	**% owned by ECB & euro area NCBs**	**Remaining percentage to reach 33% issuer limit**	**Eurosystem purchases**
Dec-16	34.9	0.1	9.6	3.2	47.8	12.81	26.8%	6.2%	**4.2**
Jan-17	34.9	0.0	9.6	3.2	47.7	12.81	26.8%	6.2%	**4.2**
Feb-17	34.9	0.0	9.6	3.2	47.7	12.81	26.8%	6.2%	**4.2**
Mar-17	34.9	0.0	9.6	3.2	47.7	12.81	26.8%	6.2%	**2.9**
Apr-17	34.9	0.0	9.6	3.2	47.7	12.81	26.8%	6.2%	**2.9**
May-17	34.9	0.0	9.6	3.2	47.7	12.81	26.8%	6.2%	**2.9**
Jun-17	34.9	0.0	9.6	3.2	47.7	12.81	26.8%	6.2%	**2.9**
Jul-17	34.9	0.0	9.6	3.2	47.7	12.81	26.8%	6.2%	**2.9**
Aug-17	34.9	0.0	8.4	2.6	45.9	10.95	23.9%	9.1%	**4.2**
Sep-17	34.9	0.0	8.4	2.6	45.9	10.95	23.9%	9.1%	**4.2**
Oct-17	34.9	0.0	8.4	2.6	45.9	10.95	23.9%	9.1%	**4.2**
Nov-17	34.9	0.0	8.4	2.6	45.9	10.95	23.9%	9.1%	**4.2**
Dec-17	34.9	0.0	8.4	2.6	45.9	10.95	23.9%	9.1%	**4.2**

Source: ECB , Bloomberg, Eurobank Economic Research

Debt relief measures for Greece agreed at the May 25th Eurogroup

Time horizon	Measures
Short term (From completion of 1st review to the expiration of the current programme in Aug 2018)	Smoothening the EFSF repayment profile under the current weighted average maturity
	Use EFSF/ESM diversified funding strategy to reduce interest rate risk without incurring any additional costs for former programme countries
	Waiver of the step-up interest rate margin related to the debt buy-back tranche of the 2nd Greek programme for the year 2017
Medium term (Upon succesful completion of ESM programme)	Abolish the step-up interest rate margin related to the debt buy-back tranche of the 2nd Greek programme as of 2018
	Use of 2014 SMP profits from the ESM segregated account and the restoration of the transfer of ANFA and SMP profits to Greece (as of budget year 2017) to the ESM segregated account as an ESM internal buffer to reduce future gross financing needs.
	Liability management - early partial repayment of existing official loans to Greece by utilizing unused resources within the ESM programme to reduce interest rate costs and to extend maturities. Due account will be taken of exceptionally high burden of some Member States.
	If necessary, some targeted EFSF reprofiling (e.g. extension of the weighted average maturities, re-profiling of the EFSF amortization as well as capping and deferral of interest payments) to the extent needed to keep GFN under the agreed benchmark in order to give comfort to the IMF and without incurring any additional costs for former programme countries or to the EFSF.
Long term (After finalization of the ESM programme)	Activation of a contingency debt relief mechanism after the finalization of the ESM programme so as to ensure debt sustainability in the long run in case that a more adverse scenario were to materialize.

Underlying assumptions to derive Greece's GFN ratio (see page # 19)

	Baseline	Upside	Downside I	Downside II
Medium-/long-term real GDP (%)	1.5% after 2021 & 1.25% after 2030	0.25 pp higher relative to baseline after 2019	0.25 pp lower relative to baseline between 2019 & 2030	0.25 pp lower relative to baseline between 2019 & 2031
General government primary suplus (% GDP)	3.5% for 10 years post-programme completion & decreasing gradually to 1.5% by 2040	assumed to average 2.4% of GDP during post-programme period	assumed to average 2% of GDP during post-programme period	assumed to average 1.7% of GDP during post-programme period
Privatization revenue	€18 bn	€20 bn over 2015-2022 (c. €50bn over entire projection horizon - Eurobank Research assumption)	€6.5 bn (Eurobank Research assumption)	€6.0 bn (Eurobank Research assumption)
Average market refinancing rate (%) post-programme	5.0%	5% (Eurobank Research assumption)	6.5% (Eurobank Research assumption)	7.3% (Eurobank Research assumption)
Other assumptions	Broadly in line with the EC's DSA (June 2016)	Broadly in line with the EC's DSA (June 2016)	Broadly in line with the EC's DSA (June 2016)	Broadly in line with the EC's DSA (June 2016)

Source: EC (June 2016), Eurobank Economic Research

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