Greece

Contrasting the views of the EU Institutions and the IMF staff on the outlook of Greek economy and the present bailout programme

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Foreword (*)

The study presented herein has been motivated by the ongoing negotiations between the Greek government and the Institutions (EC/ECB/IMF/ESM) in the context of the 2nd review of Greece's present bailout programme. It attempts to analyze important deviations and similarities in the views presented by the IMF Staff and the EU Institutions as regards the prospects of the Greek economy, the sustainability of public debt, the fiscal consolidation programme as well as and the product and service market reforms that need to be implemented to boost productivity and restore competitiveness within the Currency Union. The analysis leans on the information presented in several official-sector documents including, inter alia, the European Commission's *"Compliance Report, The Third Economic Adjustment Programme for Greece, First Review"* (June 2016), the IMF Country Report, No. 16/130 *"Preliminary Debt Sustainability Analysis – Updated Estimates and Further Considerations"* (May 2016) as well as some of the key views that are understood to be included in the new Staff reports that are expected to be discussed at the IMF's Executive Board meeting on February 6, 2017. We believe that the analysis provides a useful framework to comprehend the views of the different key stakeholders in the Greek programme and the policies that need to be implemented for restoring economic growth and fiscal sustainability.

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

Summary of views and key findings

Economic growth and fiscal sustainability

The views of the IMF's Staff

- Highly unsustainable public debt burden, despite generous large-scale flow relief received thus far;
- Lingering structural impediments to investment and growth that continue to hamper competitiveness;
- Vulnerable structure of public finances relying on generous pension spending and high tax rates on narrow bases;
- Impaired bank and private sector balance sheets.

Policies to rebalance public finances, address private sector over-indebtedness and restore competitiveness

The views of the IMF's Staff

- Rebalance fiscal policy mix away from excessive taxation on narrow bases and un-affordable spending on current retirees toward better-targeted social transfers and spending on essential public services and investment.
- Strengthen efforts to track down tax evasion and address the large stock of tax and bank debt (NPLs) to help clean up private sector balance sheets and facilitate return to sustainable credit creation.
- Preserve and enhance achieved labor market gains and accelerate privatizations and product market reform to boost productivity and restore competitiveness within the Currency Union.

Public debt sustainability analysis and scope for additional debt relief

Contrasting the views of the EU Institutions and the IMF's Staff

- In their June 2016 baseline DSA for Greek public debt, the EU institutions portrayed a more optimistic view relative to that depicted by the IMF Staff. This is mainly due to more benign assumptions regarding the path of the fiscal primary balance as well as the medium- and long-term nominal growth outlook of the Greek economy.
- By implication, debt restructuring proposals supported by the EU institutions appear to be way less aggressive relative to what appears to be needed to ensure debt sustainability under the IMF's assumptions.
- In their May 2016 DSA, the IMF Staff presented an indicative relief package that could purportedly restore Greek public debt sustainability under the baseline scenario. The restructuring modalities (which, we understand, continue to apply in the scenario included in the IMF's January 2017 DSA) go well beyond the scope of measures proposed by Eurogroup of 25 May 2016.
- In the analysis presented herein we attempt to replicate the various DSA scenarios presented by the EU Institutions and the IMF Staff in order to analyze multi-decade debt dynamics under no-policy-change scenarios as well as scenarios assuming additional debt relief by the official sector.

Part I

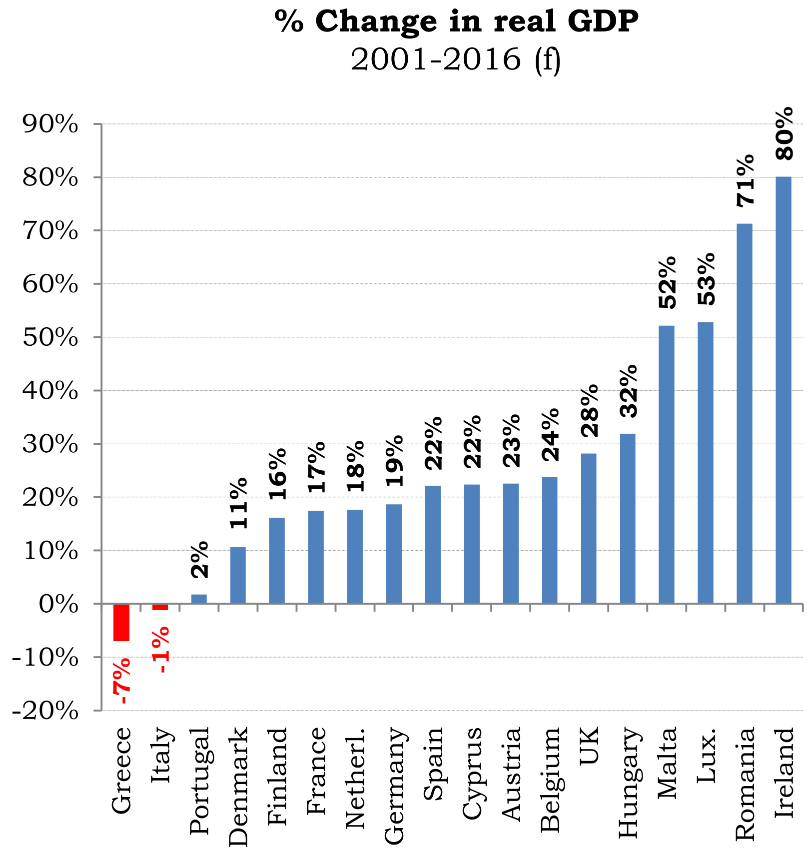
Greece macroeconomic outlook and progress in implementing structural reforms

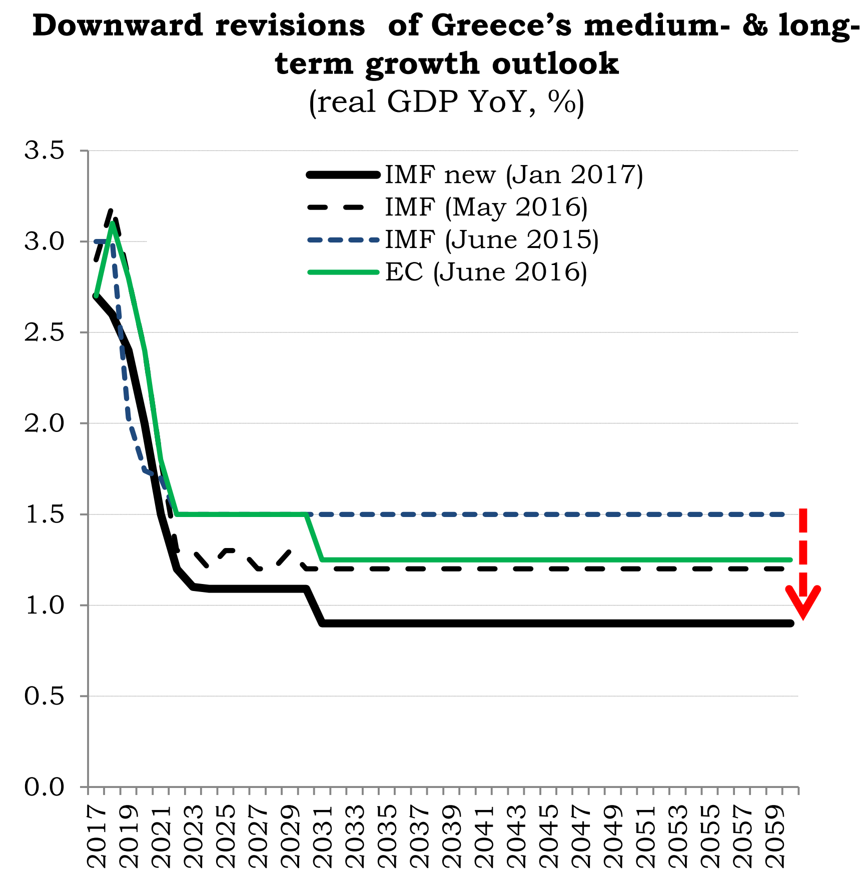
Key findings and recommendations included in the staff report for the Article IV consultation

Downward revisions of Greece's medium- & long-term growth outlook

The view of the IMF's staff

- ❑ Despite significant progress in unwinding pre-crises imbalances, Greece's economy has not yet recovered and output growth remains elusive, with serious risks continuing to cloud the short-, medium- and long-term outlook. Such risks include:
- ✓ **highly unsustainable public debt burden**, despite generous large-scale flow relief received thus far;
- ✓ **lingering structural impediments** to investment and growth that continue to hamper competitiveness;
- ✓ **vulnerable structure of public finances** relying on generous pension spending and high tax rates on narrow bases;
- ✓ **impaired bank and private sector** balance sheets.





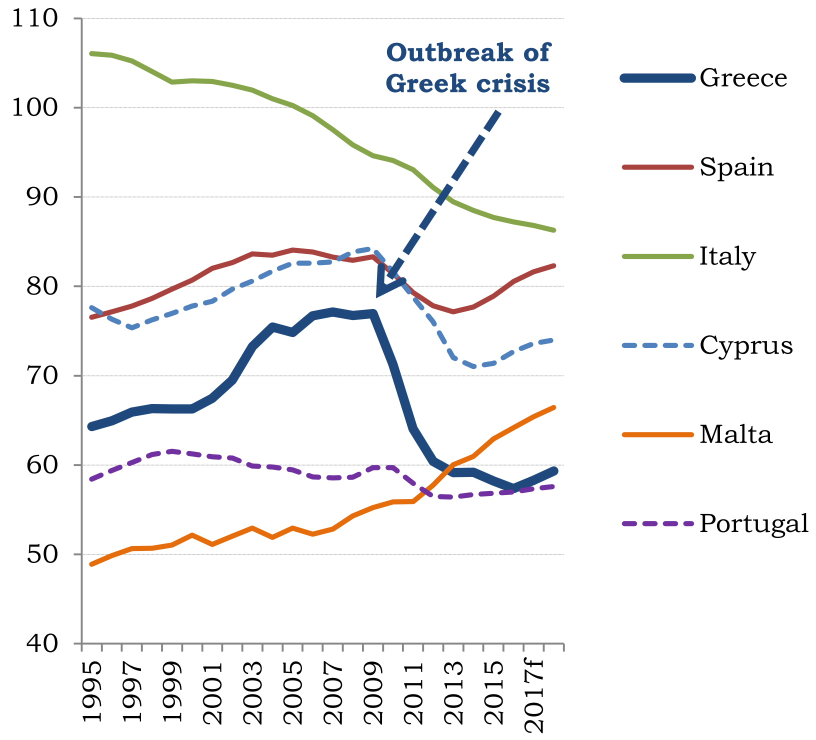
Source: IMF, EC, Eurobank Research

Greece's convergence prospects remain bleak

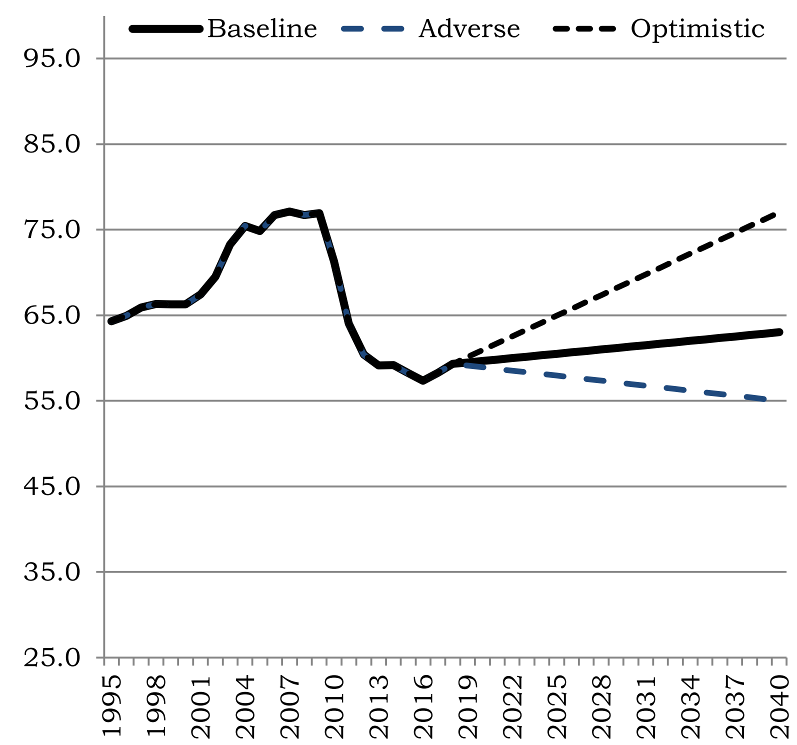
The view of the IMF's staff

- **Greece's per capita GDP declined sharply** over the last several years, further widening the gap in leaving standards vis-à-vis the rest of the euro area. According to the IMF staff analysis, this reflects the legacy of unsustainable domestic policies in the pre-crisis era, which had masked the economy's profound lack of competitiveness.
- **Under the staff's baseline macro projections**, the aforementioned gap will persist in the medium- and long-term. This calls for the rigorous implementation of a critical mass of structural reforms in Greece, with a view to boost productivity and competitiveness.

Dramatic decline in Greece's leaving standards vs. the rest of the euro area
(Real GDP per capita as % of EA average)



IMF staff projects Greece's GDP per capita gap to persist in the long-term
(Real GDP per capita as % of EA average)



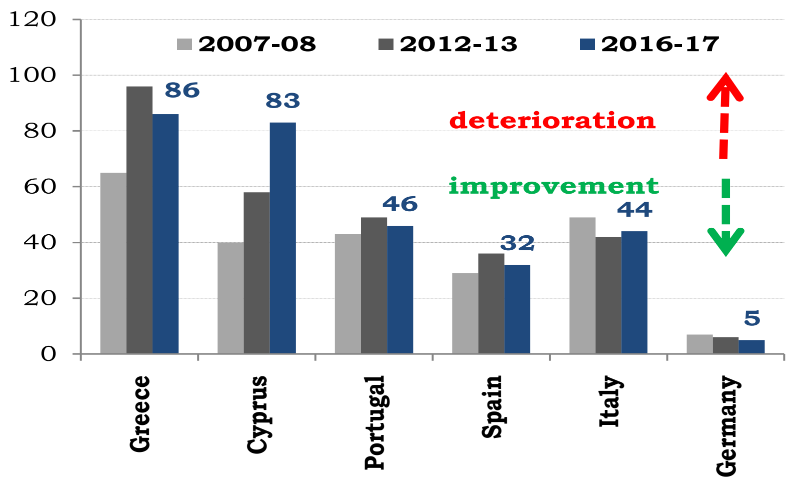
Source: IMF, EC (AMECO), Eurobank Research

Some recent competitiveness gains, but still below pre-crisis levels

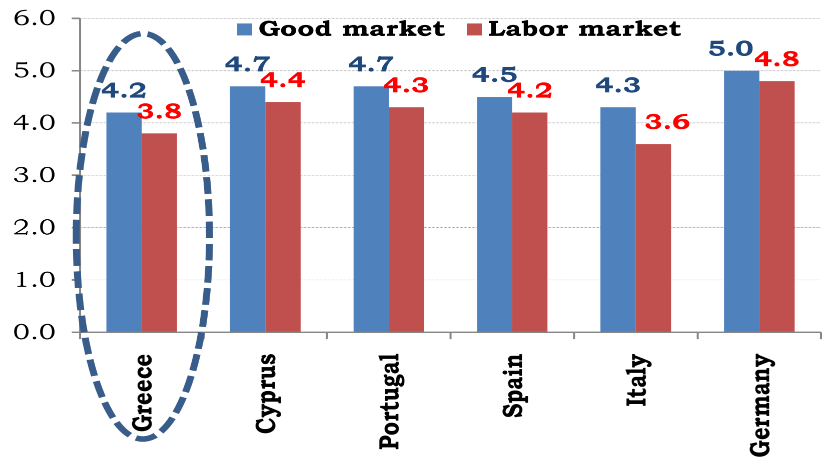
The view of the IMF's staff

- **Despite efforts to address its weak institutions, Greece has not fully regained competitiveness.** IMF Staff urges Greece to preserve important labor market gains achieved thus far and at the same time accelerate product and service market reforms as well as privatizations

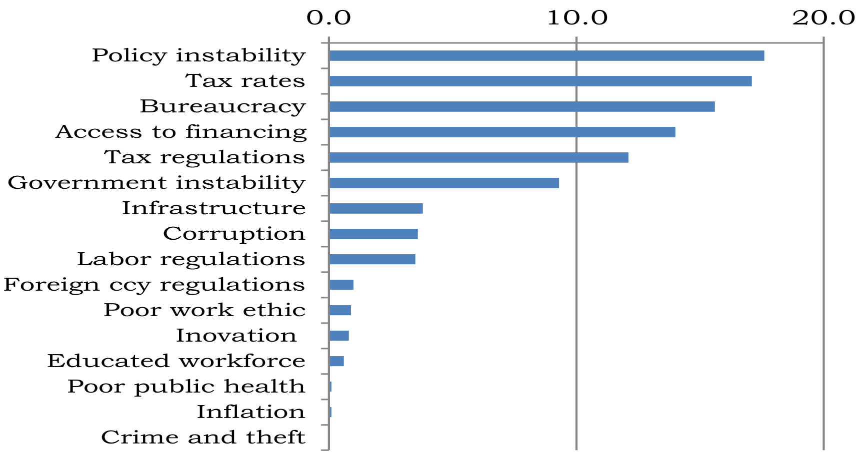
Greece's Competitiveness index improved since 2012, but remains below its pre-crisis levels (GCI ranking – Rank / 138)



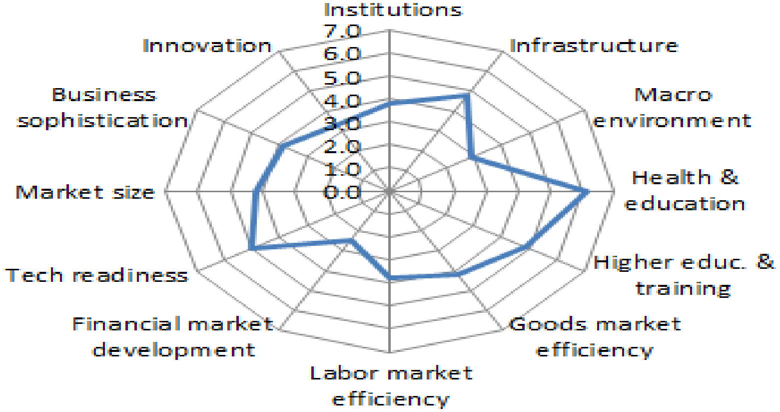
Greece continues to lag other EA periphery economies in product and labor market efficiency (1-7 best)



Policy instability, taxation & bureaucracy are the three most serious impediments for doing business



Macroeconomic environment, financial market development & innovation are the three weakest pillars of Greece GCI scoring (1-7 best)



Source: World Economic Forum: The Global Competitiveness Report (2016-2017), Eurobank Research

Policies to enhance sustainability of public finances

The view of the IMF's staff

***<u>Policy recommendations</u>*: rebalance fiscal policy mix away from excessive taxation on narrow bases and un-affordable spending on current retirees toward better-targeted social transfers and spending on essential public services and investment**

- ✓ ***Current fiscal policy remains anchored in an overly optimistic m-t primary surplus target (3.5% of GDP),*** *both in view of cross-country evidence and pent-up spending demand (healthcare costs, high unemployment, weak social net).*
- ✓ ***Under the current package of fiscal reforms, Greece should be able to reach a primary surplus of c. 1.5% of GDP by 2018.*** *Should the authorities choose to maintain a m-t surplus of 3.5% of GDP, they will have to implement additional, high-quality reforms.*
- ✓ ***Targeting m-t primary surpluses higher than 1.5% of GDP is not advisable for as long as the recovery remains tentative and fragile.*** *Any additional fiscal measures (beyond these envisaged in the current programme) should be implemented only once the output gap closes i.e., not earlier than 2019/2020, as per the IMF's current projections.*
- ✓ ***Regardless of the fiscal targets, a rebalancing of the fiscal policy mix is needed towards more growth enchasing and socially just policies.*** *Such as rebalancing should aim to shift the policy mix away from excessive taxation on narrow bases and overly generous spending on entitlements and toward better-targeted social transfers and spending on essential public services and investment.*
- ✓ ***Excessively high marginal tax rates should be reduced and tax bases broadened,*** *as present policies discourage labor participation, encourage tax evasion and incentivize domestic businesses to relocate to low-tax neighboring economies. According to the IMF Staff's estimates, more than half of wage earners in Greece are currently exempt from paying personal income tax.*
- ✓ ***Social spending should be rebalanced away from un-affordably high pensions for current retirees,*** *with incipient savings used to finance a well-targeted social net, essential public services and growth-enhancing public investment.*
- ✓ ***According to staff analysis, Greece's pension system runs a deficit of c. 11% of GDP vs. a respective euro area (EA) average of 2.5% of GDP****. Furthermore, social protection coverage in Greece for the poorest segments of the population remains significant lower than in other EA economies and the country is one of the two EA States that hasn't so far provided a last resort support for the working-age poor.*

Source: IMF Staff Report for the 2016 Article IV Consultation, Eurobank Research

Policies to address private sector over-indebtedness

The view of the IMF's staff

<u>Policy recommendations</u>: strengthen efforts to track down tax evasion and address the large stock of tax debt to help clean up private sector balance sheets; undertake decisive action to rapidly deduce the large stock of NPLs to facilitate return of sustainable credit creation.

- ✓ ***In combating tax evasion, moral hazard-inducing amnesty schemes should be avoided.*** *Instead domestic authorities should fully operationalize and insulate from political interference the recently-established independent revenue agency, use strengthened enforcement tools against strategic defaulters and adopt a risk-based approach for the prioritization of new debt, large debt and high net-worth individuals.*
- ✓ ***Addressing the endemic problem of high and growing private sector debt to the tax authority and the social security system requires the creation of a comprehensive and holistic debt restructuring framework, which should also include bank debt.*** *In this context, authorities should move away from resorting to punitive fines and unsustainable installment schemes and instead develop efficient restructuring modalities in line with individual taxpayers' debt-servicing capacity.* ***<u>Our note</u>***: *the legislation of an out-of-court debt restructuring framework which appears to be in line with best international practice constitutes a key milestone of the 2nd review of Greece's current bailout programme.*
- ✓ ***In addressing the high stock of private-sector bank debt, authorities should ensure that the recently legislated insolvency and debt-enforcement framework becomes fully operational,*** *including by establishing the insolvency administrator profession and facilitating auctions.*
- ✓ ***On the existing supervisory framework to deal with bank debt, the IMF staff claims that the existing, back-loaded NPE reduction targets are subject to material downside risks.*** *Thus, the supervisory authorities (BoG and SSM) should review banks' strategies and targets and ensure that they are credible and sufficiently ambitious.*
- ✓ ***Bank governance should be strengthened,*** *with the authorities implementing their plans to fully reconstitute eligibility criteria in line with prudent internal practices and the relevant criteria set by the SSM. Longer-term, the authorities will also need to divest public ownership in banks to international financial institutions to facilitate the inflow of international know how and minimize contingent liabilities of the State.*
- ✓ ***Last but not least, capital controls should be swiftly eliminated, while safeguarding financial system stability.*** *The IMF staff reiterates the need to create a concrete milestone-based roadmap for the elimination of lingering restrictions.*

Source: IMF Staff Report for the 2016 Article IV Consultation, Eurobank Research

Policies to boost productivity and restore competitiveness

The view of the IMF's staff

***Policy recommendations*: Greece should preserve and enhance achieved labor market gains and accelerate privatizations and product market reform to boost productivity and restore competitiveness within the Currency Union.**

- ✓ ***Notwithstanding important gains achieved thus far, further labor market flexibility is needed to attract investment and facilitate the restructuring of indebted domestic firms[1].*** *Calls for reversing earlier labor market reforms are misguided, risking to unwind the competitiveness gains achieved so far, hurting job creation.*
- ✓ ***Existing labor market institutions in Greece should be complemented*** *with* additional measures to bring Greece's collective dismissals and industrial action frameworks in line with international best practice.
- ✓ ***On Collective dismissals****, the authorities should consider removing the requirement for administrative approvals and bringing the threshold for collective dismissals in line with the recommendation in the EU Directive and the European Court of Justice.*
- ✓ ***Regarding industrial relations****, the authorities should align the existing framework with the best international practice by setting the appropriate quorum requirements for trade unions calling a strike and by allowing the defensive lockouts by employers.*
- ✓ ***Product and service market reforms should be accelerated*** *as despite efforts made in recent years to open up close professions, remove obstacles to competition and facilitate investment licensing, progress has been slow, uneven and subject to strenuous opposition by vested interests.*
- ✓ ***The authorities should redouble efforts to privatize state assets****, including in the area of energy, where costs remain high due to excessive state interference.*
- ✓ ***Institutional reforms should remain a key priority*** *and the authorities should strengthen their efforts to improve the efficiency of the judicial system, tackle corruption and promote innovation through increased spending on R&D, patents and collaborations between universities and the industry, as fiscal spending allows.*

1 / *For a thorough analysis on the new package of proposed reforms to align Greece's labor market institutions with best practices internationally and in Europe, see "Greek labor market reform and the agenda of the 2nd programme review",*
Greece Macro Monitor. Eurobank Research, 18 October, 2016.

Source: IMF Staff Report for the 2016 Article IV Consultation, Eurobank Research

Part II

Public debt sustainability

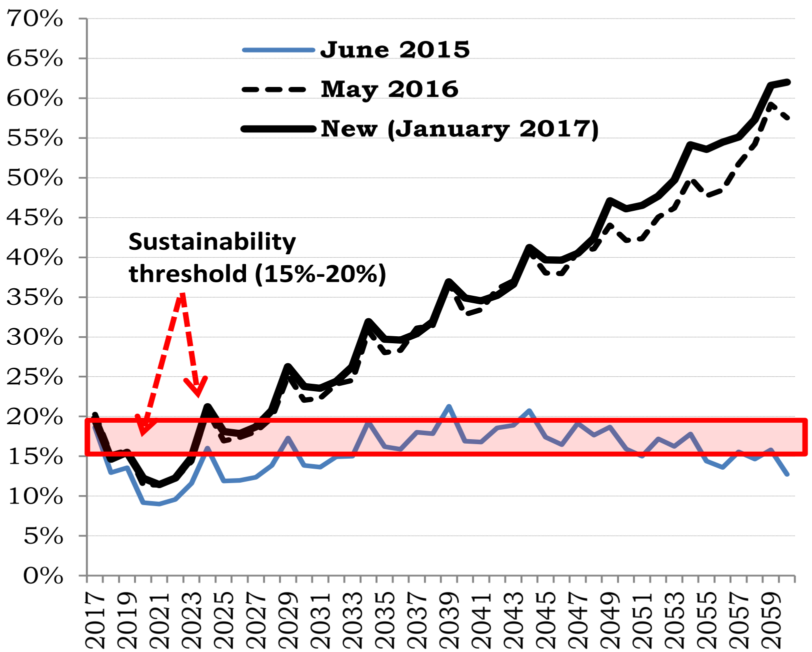
Contrasting the views of the EU Institutions and the IMF staff on the Sustainability of Greece's fiscal position

Public debt highly unsustainable without further significant relief

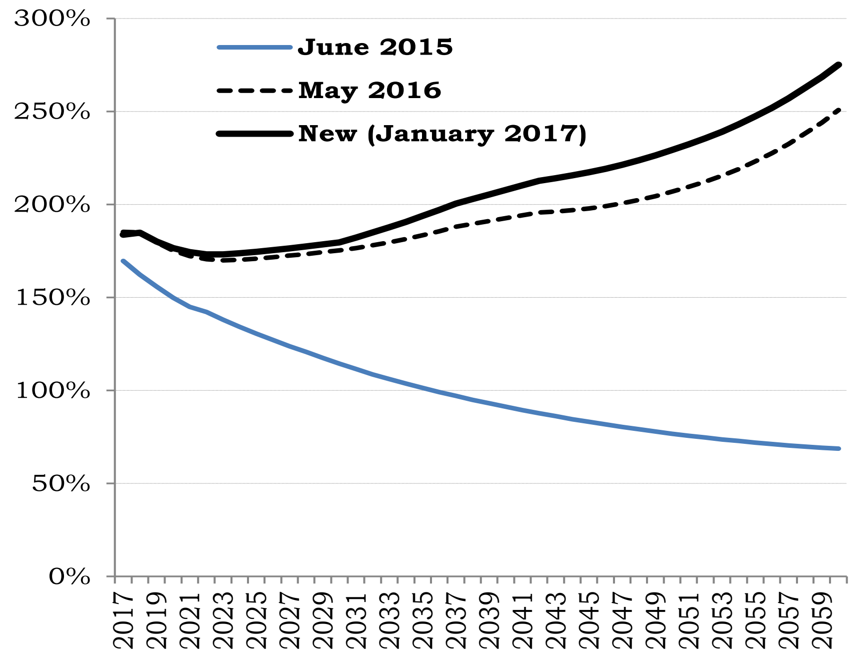
The IMF staff's view

- **IMF staff analysis suggests that Greek public debt is highly unsustainable,** even with full implementation of policies agreed under the new (3rd) bailout programme, as Greece will likely be unable to replace highly subsidized official sector financing with market financing at rates consistent with sustainability.

General government gross funding need as % GDP (*)



Gross public debt as % of GDP (*)



Important note: In the graphs above, the presented evolution of gross funding needs (GFN) and/or the public debt ratio may deviate somewhat from what is projected in the IMF staff's DSAs due to certain differences in some underlying assumptions.

Key assumptions of new and old IMF staff DSAs (*)			
	Jun-15	**May-16**	**Jan-17**
Long-term Nominal GDP growth (%)	3.50%	3.00%	2.80%
Fiscal primary surplus (% GDP) 2008 onwards	3.50%	1.50%	1.50%
Set aside for bank recap needs (EUR bn)	none	€ 10bn	€ 10bn
Market refinancing rates (%)	Avrg. maturity of 5 ys and avrg. nominal IR of 6¼ % for the next several decades.	4.5%-6.0% range (c. 6.0% in 2019 & +/- 4bps afterwards per +/- 1ppt change in debt ratio)	4.5%-6.0% range (c. 6.0% in 2019 & +/- 4bps afterwards per +/- 1ppt change in debt ratio)

(*) The projected paths of Greece's public debt and GFN ratios are based on (i) some key underlying assumptions used in the IMF DSAs published in June 2015 & May 2016; (ii) adjustments to the baseline scenario we believe to be in line with the IMF's latest DSA (Jan. 2017); and (iii) 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.

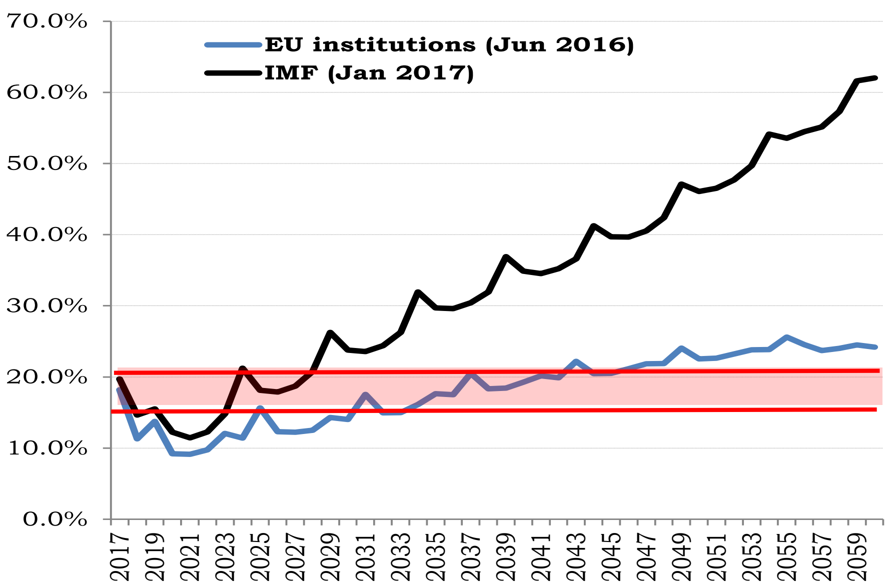
Source: IMF, Eurobank Economic Research

Sustainability analysis of Greek Public debt

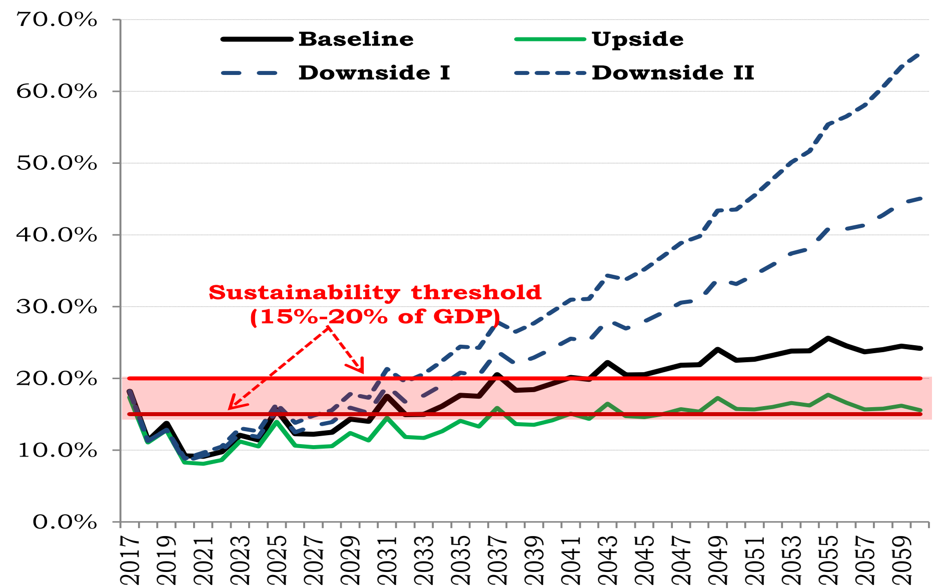
Contrasting the IMF's and the EU institutions' views

- **In their June 2016 baseline DSA for Greek public debt, the EU institutions portrayed a more optimistic view relative to that depicted by the IMF staff.** This is mainly due to more benign assumptions regarding the path of the fiscal primary balance as well as the medium- and long-term nominal growth outlook of the Greek economy. By implication, debt restructuring proposals supported by the EU institutions appear to be way less aggressive relative to what appears to be needed to ensure debt sustainability under the IMF's assumptions

IMF (Jan. 2017) vs. EU Institutions' (Jun. 2016) baseline DSAs for Greece
(General government GFN as % GDP)



EU Institutions' June 2016 DSA for Greece
(General government GFN as % GDP)



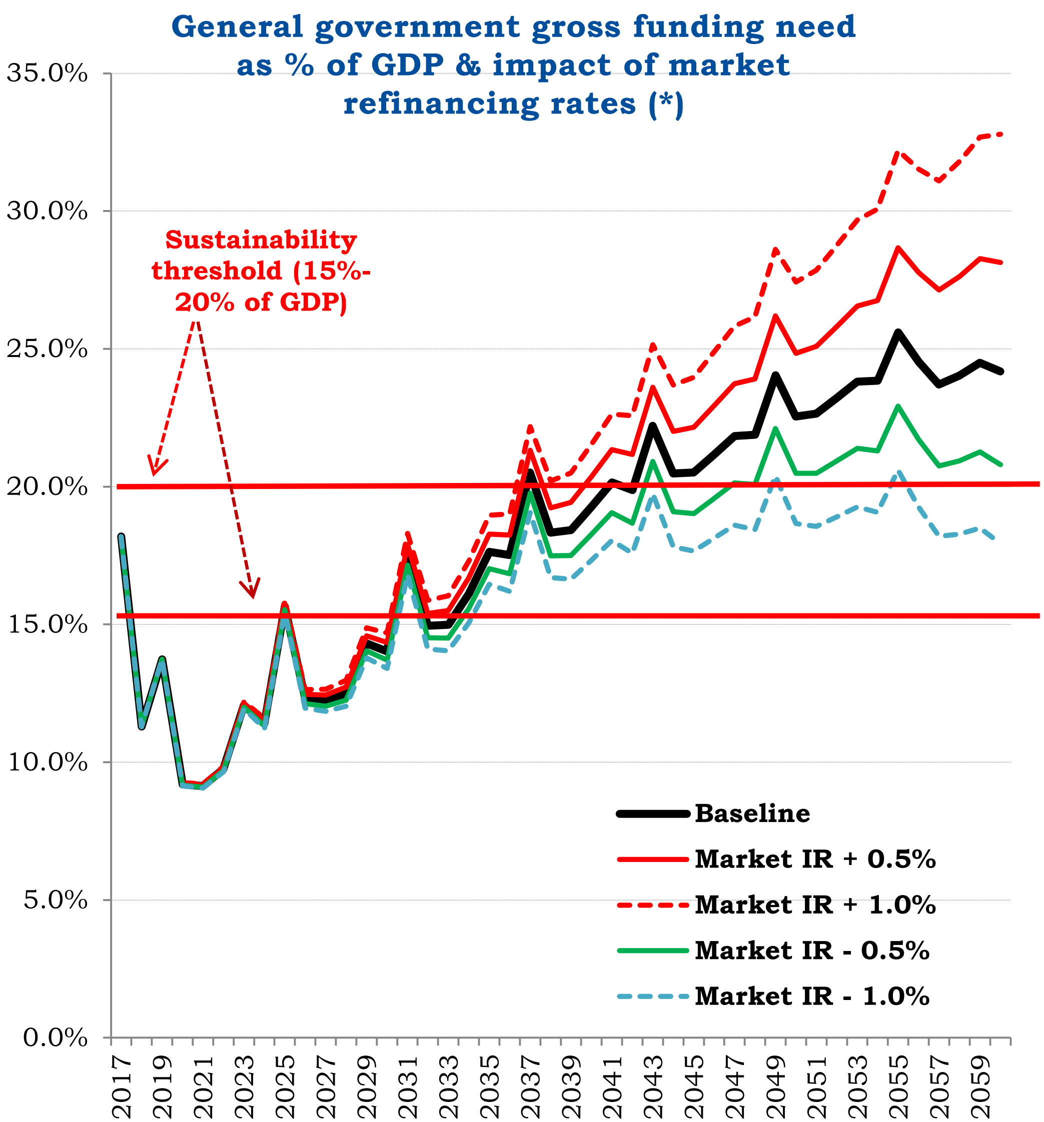
Important note: In the graphs above, the presented evolution of gross funding needs (GFN) and/or the public debt ratio may deviate somewhat from what is projected in the EU Institutions' and the IMF staff's DSAs due to certain differences in some underlying assumptions.

Key baseline assumptions of IMF (Jan 2017) and EU institutions (Jun 2016) DSAs		
	IMF (Jan 2017)	EU Institutions (Jun 2016)
Long-term Nominal GDP growth (%)	2.80%	Reaches c. 3.3% by 2030 and stays at this level afterwards
Fiscal primary surplus (% GDP) from 2008 onwards	1.50%	3.5% in 2018 & for 10yrs post-programme completion; gradually declines to 3.2% by 2030 and coverges to 1.5% by 2040
Privatisation revenue over the projection horizon (EUR bn)	€ 5bn	€ 15bn
Set aside for bank recap needs (EUR bn)	€ 10bn	none
Market refinancing rates (%)	c. 6.0% in 2019 & +/- 4bps afterwards per +/- 1ppt change in debt ratio (4.5% - 6.0% fluctuation range)	c. 5.0% in 2019 (average market refinancing rate post-programme: 5.0%)

Source: IMF, EC, Eurobank Economic Research

Gross financing needs: sensitivity to market refinancing rates

Scenario analysis based on EU Institutions' June 2016 DSA



(*) 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. what is assumed in the 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

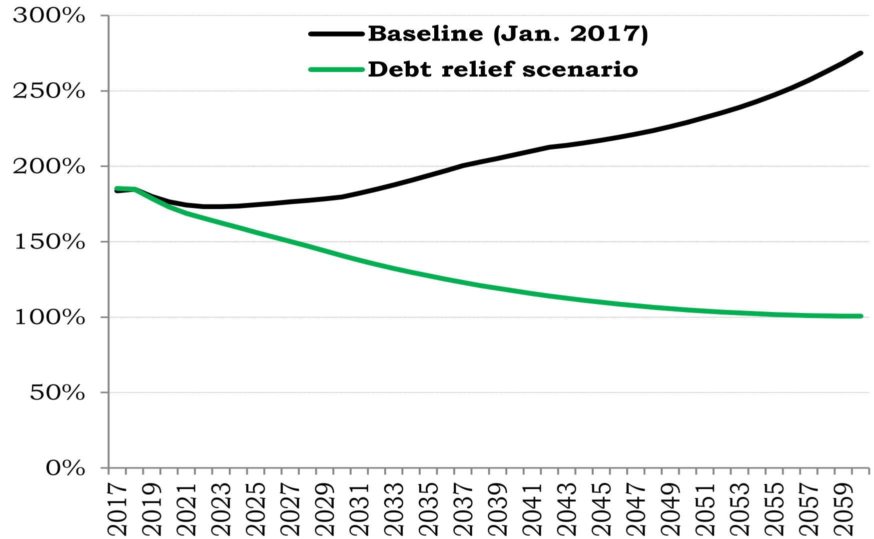
Source: EC, Eurobank Economic Research

Indicative debt restructuring modalities presented by the IMF staff

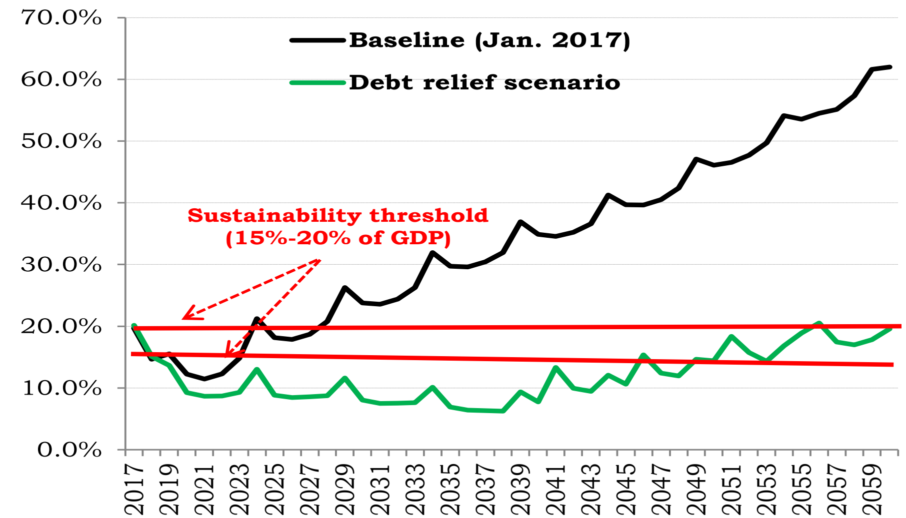
To satisfy sustainability objectives under the baseline scenario

- **In their May 2016 DSA on Greek public debt, the IMF presented an indicative relief package that could purportedly restore debt sustainability under the staff's baseline scenario.** The modalities of that package (which, we understand, continue to apply in the scenario included in the IMF's current DSA) go well beyond the scope of measures proposed by Eurogroup. They include, inter alia, principal and interest grace extensions as well as longer maturity of GLF and ESM loans, not envisaged in the debt relief framework laid down in the Eurogroup of May 25, 2016

IMF baseline DSAs for Greece (Jan 2017)
Baseline vs. debt relief scenario
(Gross public debt as % GDP)



IMF baseline DSAs for Greece (Jan 2017)
Baseline vs. debt relief scenario
(GFN as % GDP)



Important note: In the graphs above, the presented evolution of gross funding needs (GFN) and/or the public debt ratio may deviate somewhat from what is projected in the IMF staff's DSA due to certain differences in some underlying assumptions.

(*) Debt restructuring modalities presented in the IMF's DSA

- **Debt relief** implemented after expiration of current programme (mid-2018)
- **GLF -** loan maturity extension (30 years) along with longer deferrals on interest and principal payments (by 21 and 20 years, respectively)
- **EFSF -** loan maturity extension (14 years) along with longer deferrals on interest and principal payments (by 20 and 17 years, respectively)
- **ESM -** loan maturity extension (10 years) along with longer deferrals on interest and principal (by 19 and 6 years, 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

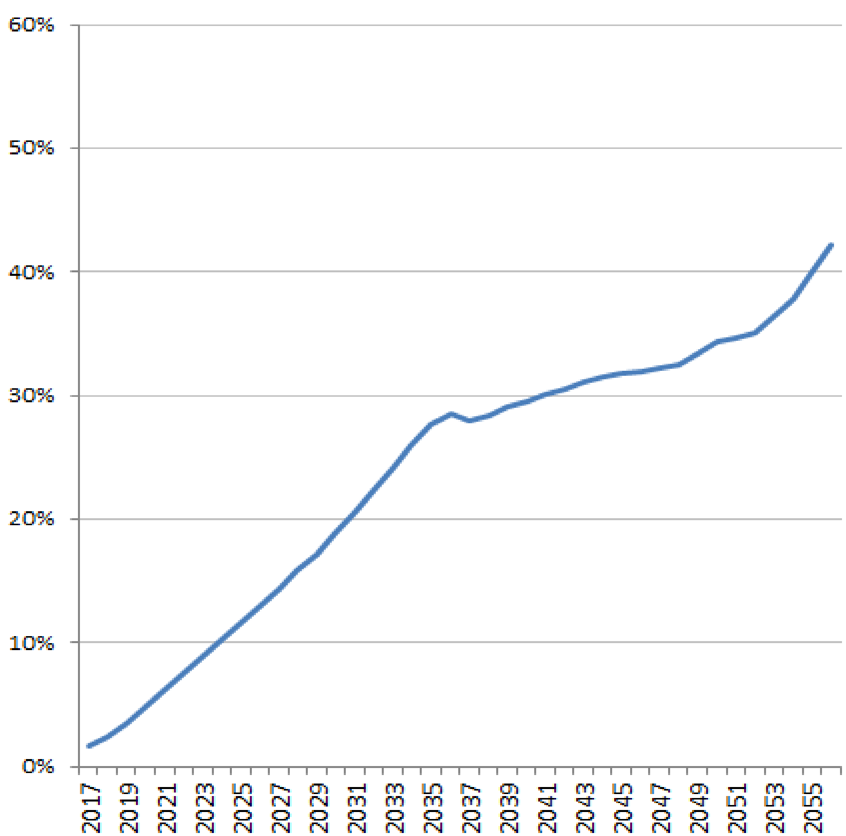
Source: IMF, Eurobank Economic Research

IMF staff's indicative debt relief package for Greece

Implied cash flow & stock implications

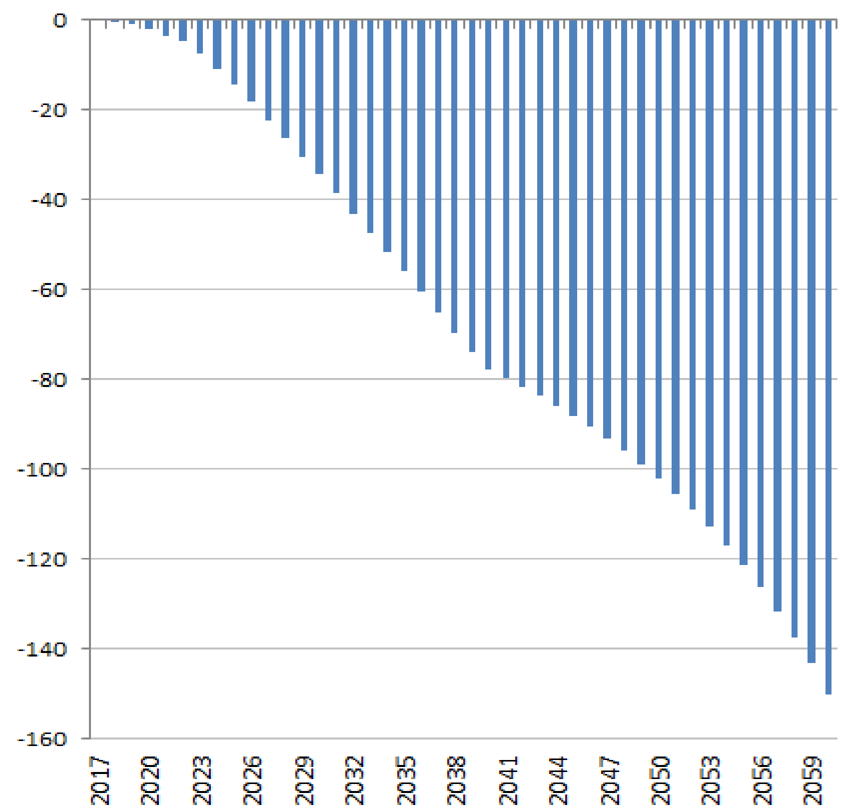
Cash flow relief in NPV terms

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 (**)



Important note: In the graphs above, the presented evolution of gross funding needs (GFN) and/or the public debt ratio may deviate somewhat from what is projected in the IMF staff's DSAs due to certain differences in some underlying assumptions.

(*) Discount rate for NPV calculation assumed at 3%

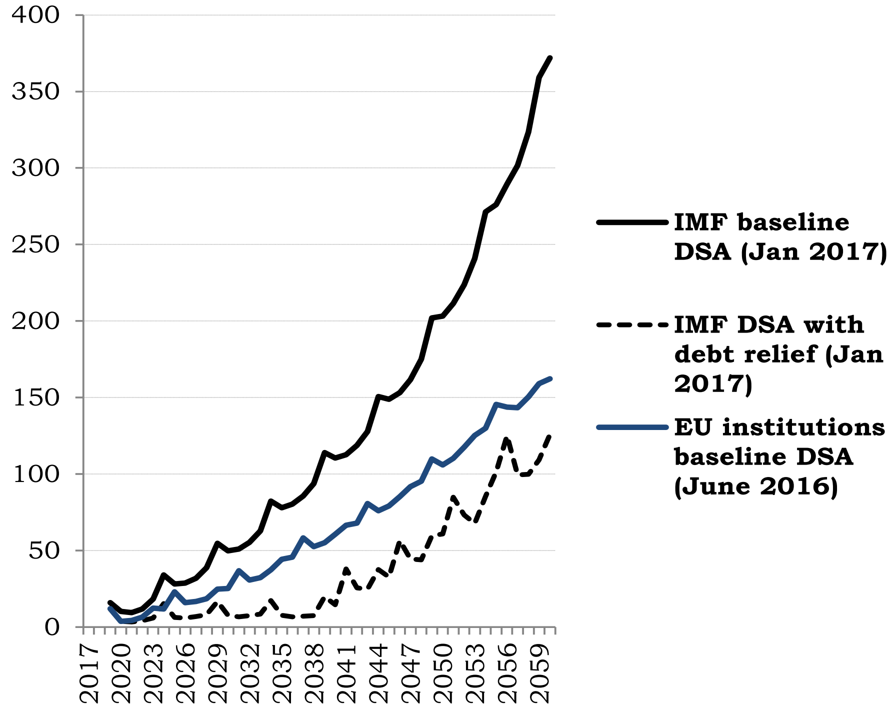
(**) Modalities of *baseline* and *debt relief scenario similar to these assumed in the previous page*

Source: IMF, Eurobank Economic Research

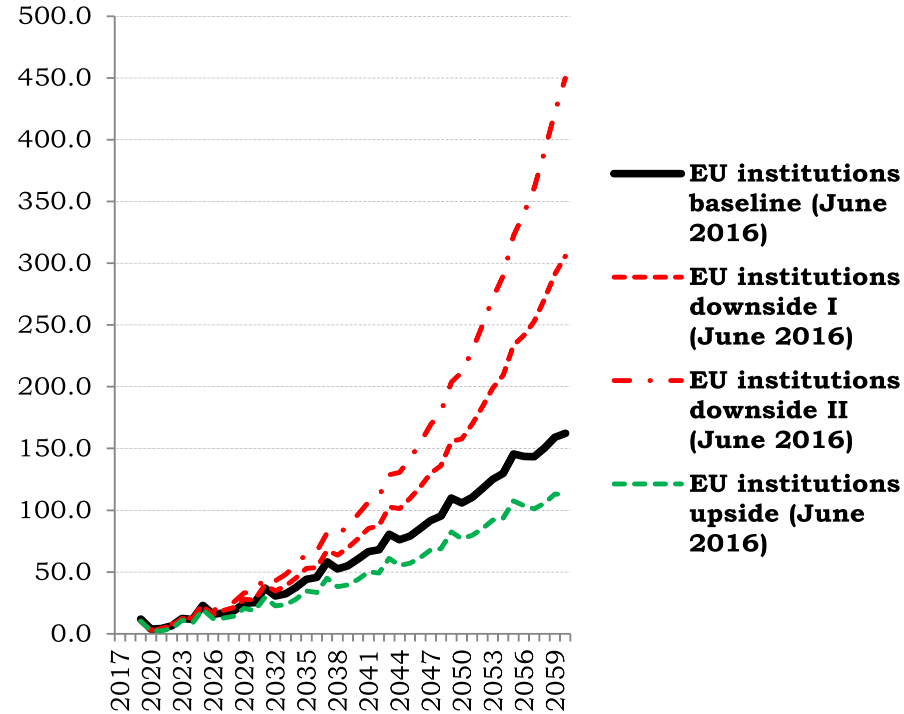
Required market access to cover projected funding gaps

Contrasting the IMF's and the EU institutions' views

Required market access, including T-bill issuance, to close projected funding gaps (*)
Official-sector DSA scenarios (EUR bn)



Required market access, including T-bill issuance, to close projected funding gaps (**)
EU Institutions' DSA scenarios (EUR bn)



(*) Underlying macro assumptions presented in the table below
(**) Underlying macro assumptions presented in Appendix

Key baseline assumptions of IMF (Jan 2017) and EU institutions (Jun 2016) DSAs	IMF (Jan 2017)	EU Institutions (Jun 2016)
Long-term Nominal GDP growth (%)	2.80%	Reaches c. 3.3% by 2030 and stays at this level afterwards
Fiscal primary surplus (% GDP) from 2008 onwards	1.50%	3.5% in 2018 & for 10yrs post-programme completion; gradually declines to 3.2% by 2030 and coverges to 1.5% by 2040
Privatisation revenue over the projection horizon (EUR bn)	€ 5bn	€ 15bn
Set aside for bank recap needs (EUR bn)	€ 10bn	none
Market refinancing rates (%)	c. 6.0% in 2019 & +/- 4bps afterwards per +/- 1ppt change in debt ratio (4.5% - 6.0% fluctuation range)	c. 5.0% in 2019 (average market refinancing rate post-programme: 5.0%)

Source: IMF, EC, Eurobank Economic Research

Part III

Greece's State borrowing needs & funding sources

January 2017 to August and post-programme period

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

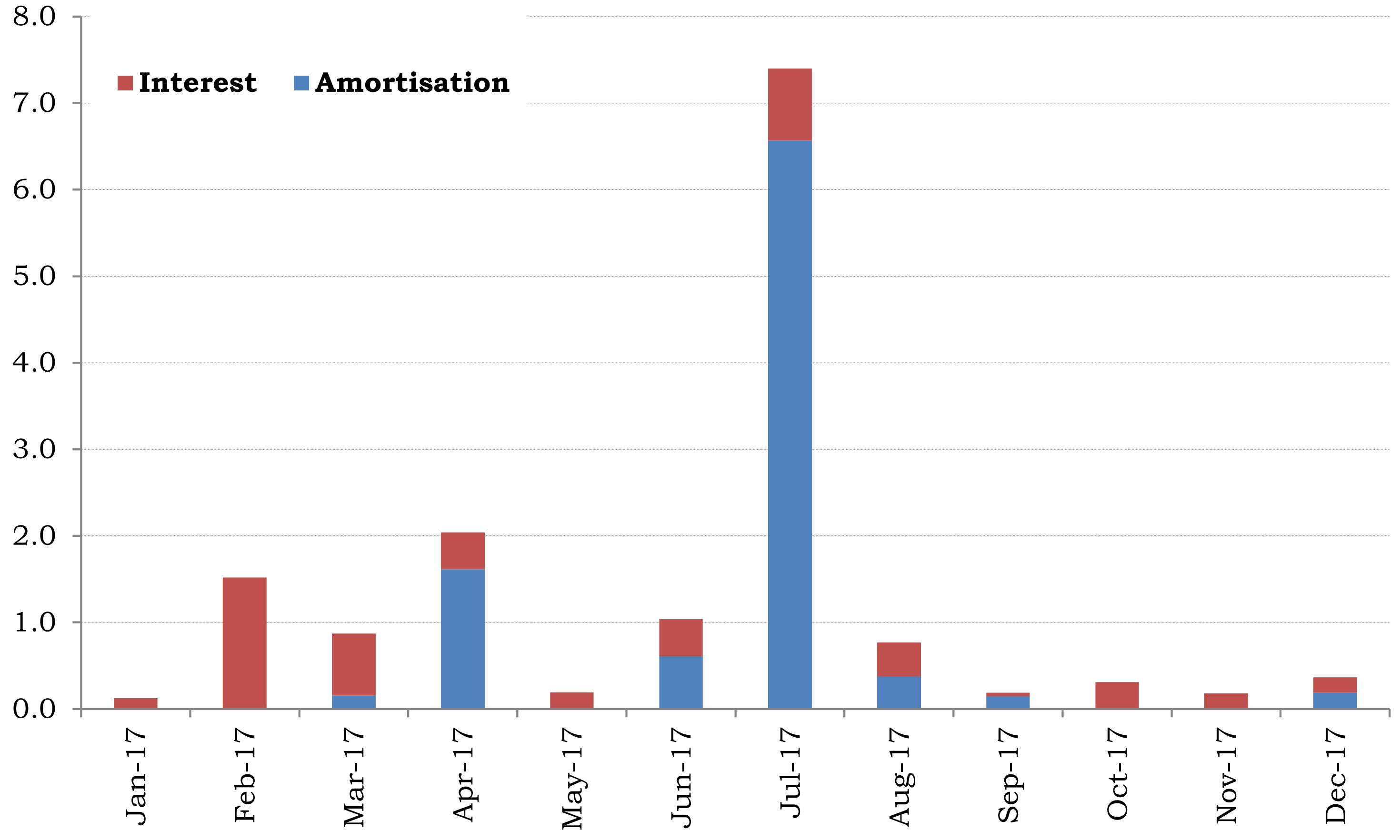
Breakdown of monthly amortization payments in 2017 (EUR bn)

	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

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

Outstanding amounts on February 4, 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

Post-programme State financing needs & sources (EUR bn)

No policy change / no medium-term debt relief scenario (*)

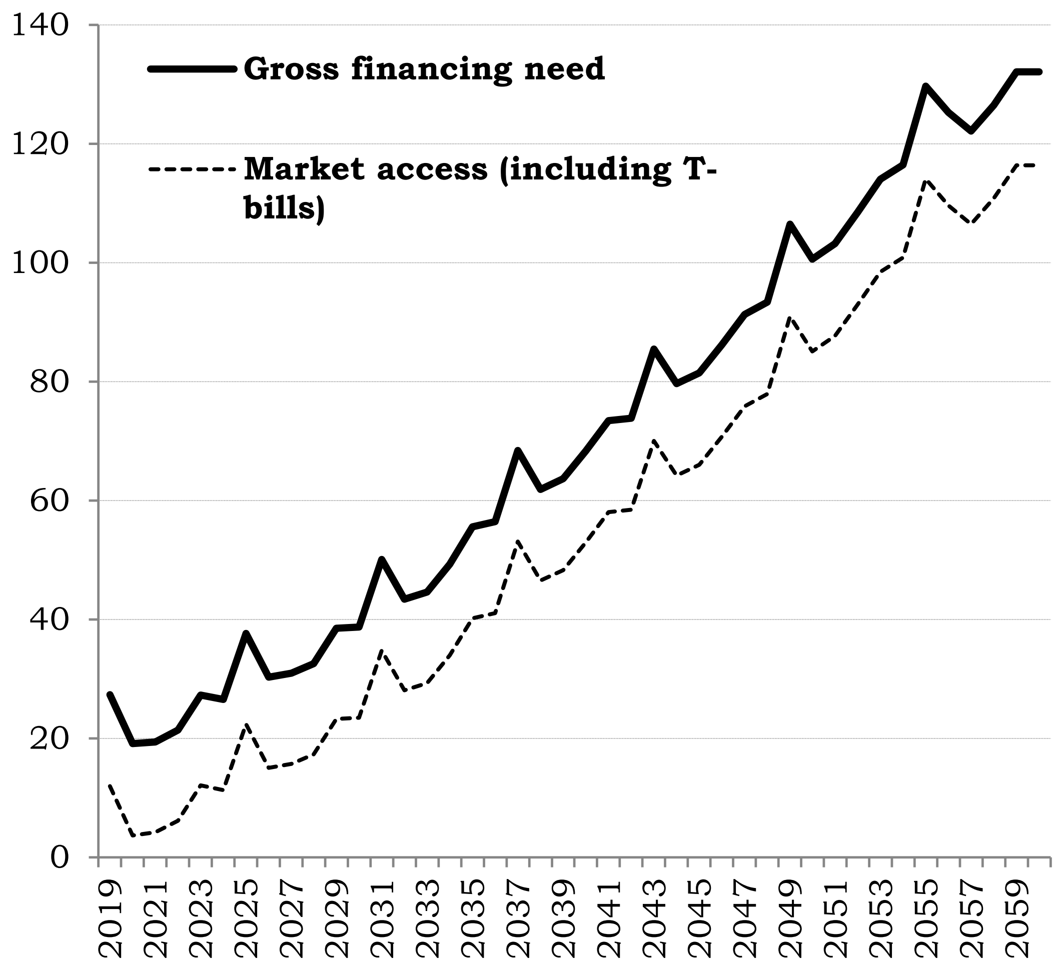
	Gross financing need						Gross financing source				Funding gap
	General government primary surplus ("-" = surplus)	Amortisation payments on public debt (including T-bills)		Interest payments on public debt			Privatisation revenue (-)	Market access			
		Oustanding amounts as of January 2017	Incremental 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

Borrowing need & required market access to close funding gap (EUR bn)

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

Part IV
Short-term debt relief measures for Greece
& impact of potential inclusion in QE

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

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.

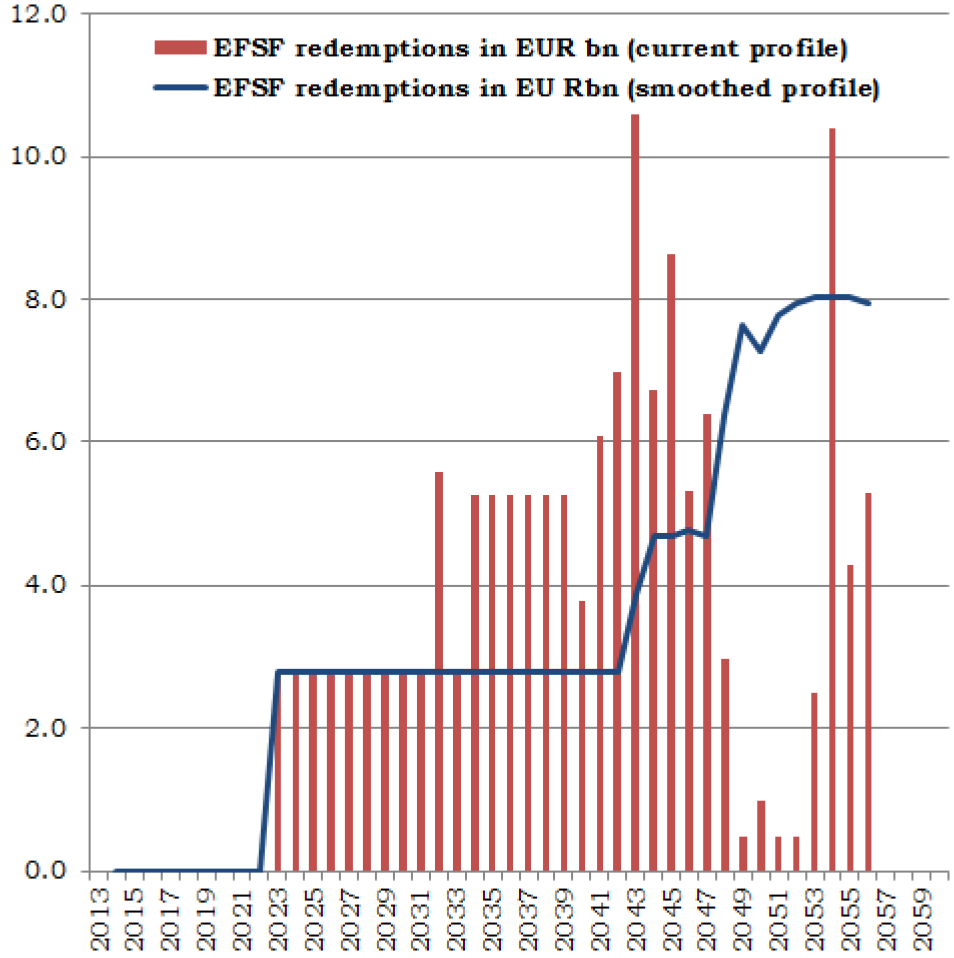
Short-term debt relief package for Greece

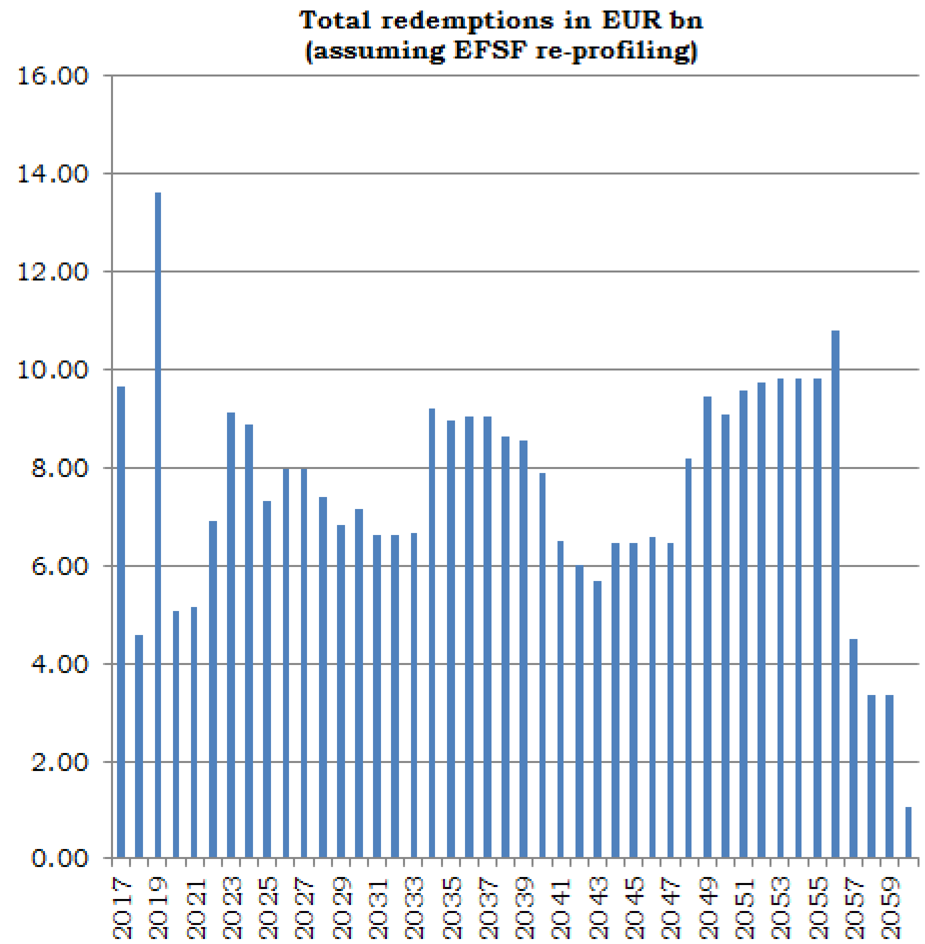
Stock & cash-flow impact (ESM projections)

	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

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 oustanding 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

Appendix

EU Institutions' DSA for Greek public debt (June2016)
Underlying assumptions

	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, Eurobank Economic Research

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