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www.eurobank.gr/research
EurobankGlobalMarkets Research@eurobank.gr

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Hard and *soft* OSI scenarios for the restructuring of Greek public debt

Stock and cash flow implications

Dr. Platon Monokroussos
Chief Market Economist
Deputy General Manager
pmonokrousos@eurobank.gr

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This note presents a technical study on the modalities of a number of debt relief packages for Greece, aiming to reduce the stock of public debt (either upfront or on an NPV basis) and to make the general government borrowing requirement more manageable on a multi-year basis. The OSI relief scenarios examined herein involve a number of *hypothetical* structures ranging from maturity extensions, lower interest costs and deferred interest payments to steep write offs of EU loans disbursed under both the first and the second programs. We emphasize that our analysis abstains from expressing a judgment as to the feasibility of (or the requirements for) any of these structures, concentrating merely on their potential *stock* and *cash flow* implications.

What Greece's main political parties say about sovereign debt

With leftish anti-MoU SYRIZA having won the January 25th snap general election, we take a closer look at the party's pre-election rhetoric on public debt and the type of the additional relief needed to improve debt dynamics on a sustainable basis[1]. A good summary of SYRIZA's policy deliberations as regards the aforementioned issues can be found in the January 18, 2015 edition of The Kathimerini newspaper[2]. In a relevant article, SYRIZA's leader Alexis Tsipras reiterated his party's official line on the issue, characterizing Greek public debt as unsustainable (and its servicing as unbearable), calling for a reduction of its nominal value, the insertion of a growth clause in the amount remaining outstanding post the implementation of the proposed write off as well as a moratorium on servicing costs so as to secure the necessary resources for growth. Furthermore, he repeated his call for a pan-European summit to address heavy sovereign indebtedness in the EU, on the basis of the 1953 debt relief treaty (London Debt Agreement) between the Federal Republic of Germany and creditor nations. Note that in a number of recent comments to domestic and foreign media (e.g. interview to Reuters in mid-December 2014), Mr. Tsipras called for an agreement with official lenders on Greek debt that would involve a higher than 50% write off of its nominal value, precluding in the same time any unilateral moves by a SYRIZA-led government. That would involve neither IMF loans nor bonds held by private bondholders, ostensibly leaving the EU loans given to Greece under the 1st and the 2nd bailout programs as the potential candidates for restructuring. On the other hand, New Democracy leader and outgoing Prime Minister Antonis Samaras was quoted as directly linking the term sustainability of public debt with the sovereign's ability to meet regular interest and amortization payments. Mr. Samaras

[1] Note that the case for additional relief was initially signaled by the November 2012 Eurogroup, following the restructuring of private-held Greek debt (PSI) in March 2012 and the debt buyback (DBB) operation implemented later that year. As a reminder, the official statement of that Eurogroup read that euro area Member States would be ready to consider further measures and assistance, if needed, including inter alia lower co-financing in structural funds and/or further interest rate reduction of the Greek Loan Facility (GLF), in order to ensure that Greece can reach a debt-to-GDP ratio of 124% in 2020 and "substantially lower" than 110% in 2022. Under the troika's baseline debt sustainability analysis (DSA) for Greece back then, attainability of the aforementioned debt ratio targets would require yet unspecified additional relief of 4 percent of GDP by 2020 as well as at least a further 3 percent of GDP by 2022. As per the November 2012 Eurogroup statement, these new measures would be considered when Greece reached an annual primary surplus, as envisaged in the MoU, and should be subject to the full implementation of program conditionality.

[2] The relevant article presents the official line on the issue of as many as six political parties participating in the upcoming election, as this was communicated to *The Kathimerini* newspaper by their respective political leaders.

emphasized that financial markets consider Greece's debt to be sustainable, following the earlier restructuring and relief measures, which slashed some €125bn off its nominal value and reduced its average effective interest rate to below 2%, from levels above 5% previously. Moreover, he called for a new debt relief agreement with official lenders, involving additional reductions of interest rates (and respective payments) as well as a further extension of loan maturities.

Is Greek public debt sustainable?

Considerable theoretical and empirical difficulties exist in assessing whether a country's fiscal position is sustainable. Such difficulties are further exacerbated by the fact that there is no such a thing as a universally accepted threshold value for the public debt ratio that separates a sustainable from an unsustainable fiscal position. Indeed, past incidences of major sovereign debt crises have shown that sovereign borrowers may default on a public debt ratio no much higher than 60% (e.g. Argentina in December 2001), while others may well carry an elevated debt burden for a long period of time without facing insurmountable financing problems (Japan's gross public debt ratio is currently higher than 240%-of-GDP).

In support of the latter view, earlier research has demonstrated that the quantitative limits on euro area member states' deficit and debt ratios stipulated in the Stability and Growth Pact may be far too restrictive and can be shown to be neither *necessary* nor *sufficient* to achieve a sustainable fiscal position[3]. Furthermore, some authors have argued that, in assessing whether a country's fiscal position is sustainable, one should not merely focus on the evolution of the gross public debt to GDP ratio, but instead, on the ratio of government net worth to GDP[4]. That is to take into account the government's asset-liability position and thus, to explicitly recognize that the government can utilize state assets to help repay its debt obligations. In fact, the latter definition appears to make much sense for countries like Greece that possess a sizeable portfolio of state assets[5].

Abstaining from the aforementioned methodological issues, we note that the most frequent definition of *solvency* relates to a sovereign borrower's ability to meet regular debt servicing costs, without having to resort to further significant interventions in present fiscal policies *i.e.,* major tax increases or spending cuts[6]. Furthermore, the definition of debt *sustainability* used in the troika's SDA analysis for Greece relates to the country's ability to bring its debt ratio towards some pre-specified *acceptable* targets over a given time period *i.e.,* to 124%-of-GDP by 2020 and to levels "substantially lower" than 110%-of-GDP in 2022, as per the November 2012 Eurogroup statement.

Roll over risks and sustainability of public debt

If we accept that fiscal sustainability primarily relates to the notion of serviceability of public debt, then it can be argued that Greece's public debt is more sustainable now than in the period leading to the global financial upheaval of 2008/2009. The rationale of the latter claim was explained in a special research piece we presented in the October 2014 edition of the LSE's Hellenic Observatory Papers on Greece and Southern Europe series, titled *"The Challenge of Restoring Debt Sustainability in a Deep Economic Recession: The case of Greece"*[7].

The said piece studies the evolution of the Greek public debt ratio under different assumptions regarding the size and the degree of persistence of fiscal multiplies, the implementation profile of the applied fiscal adjustment and the response of financial markets to fiscal consolidation, with its main results being summarized as follows: a) taking into account Greece's present debt ratio, a fiscal adjustment can lead to a contemporaneous increase in the ratio if the fiscal multiplier is higher than ca 0.5; b) despite the unprecedented improvement in the underlying fiscal position since 2010, the concomitant increase in the public debt ratio can be mainly attributed to its high initial level, a very wide initial structural deficit as well as the ensuing economic recession; c) notwithstanding its negative initial effects on domestic economic activity, the enormous fiscal effort undertaken over the last 5 years leaves the country's debt ratio in a more sustainable path relative to a range of alternative scenarios assuming no adjustment or a more gradual implementation profile of fiscal consolidation relative to that implemented thus far.

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[3] *See e.g.* Polito and Wickens (2005).
[4] Buiter (1985)
[5] Greece's present privatization program targets cumulative receipts of €24.2bn in 2011-2020 and around €50bn over a longer-term horizon.
[6] In mathematical terms, the said condition is met when the present value of the current public debt stock equals the present value of all future expected primary surpluses taken over an infinite time horizon. Furthermore, a relevant empirically testable hypothesis is whether or not the public debt stock time series has a unit root or alternatively, whether or not government revenues and expenditures are cointegrated.
[7] http://www.lse.ac.uk/europeanInstitute/research/hellenicObservatory/CMS%20pdf/Publications/GreeSE/GreeSE-No87.pdf

Yet, in judging whether Greece's public debt is sustainable, one needs to also assess the credibility of the present DSA assumptions and forecasts as regards *e.g.* future nominal GDP growth, the primary fiscal surplus and privatization revenue. On that front, SYRIZA's leader Alexis Tsipras claims that, under current policies, the assumptions underlying the present adjustment program are unrealistic and counterproductive, calling for a more radical solution to Greece's indebtedness problem. According to Mr. Tsipras, that would allow a significant relaxation of the respective target for the general government primary position to as low as 0% -of-GDP (balanced primary position), from what is currently envisaged in the troika's DSA analysis for Greece *i.e.*, primary surplus of 3%-of-GDP in 2015 and between 4% and 4.5%-of GDP in the years to come.

Hard vs. soft OSI scenarios and implications

This section presents a technical study of the modalities of a range of debt relief structures for Greece, involving a number of arrangements aiming to reduce the stock of public debt (either upfront or on an NPV basis) and to make the general government borrowing requirement more manageable on a multi-year basis. The analysis abstains from expressing a judgment as to the feasibility of (or the requirements for) any these structures, concentrating merely on their potential *stock* and *cash flow* implications. *Appendix I at the end of this document provides more detail as to the present modalities and the cost structure of EU loans that have so far been given to Greece in the context of the first and the second bailout programs.*

"Soft OSI" scenarios: loan maturity extensions, lower interest rates and deferral of interest payments

Here we present an updated (and extended) analysis on the implication of theoretical OSI relief structure for Greece, first presented in our October 31, 2013 Greece Macro Monitor *"Debt forgiveness is not a necessary precondition for restoring debt sustainability"*[8].The structure, which for purely demonstrative purposes is dubbed herein as *"soft OSI"*, effectively involves a 20-year extension in the average maturity of the whole package of EU bilateral loans disbursed under the 1st bailout program (€52.9bn) along with a further reduction of their interest cost and a 10-year deferral of corresponding interest payments. More specifically, the assumed relief package swaps these loans (*i.e.*, the so-called Greek Loan Facility or GLF in short) into a 50-year fixed coupon amortizing bond with 10 year grace period on interest payments. In addition, the said structure assumes that the new debt relief is agreed with official lenders sometime in H1 2015 and it also involves a renewed 10-year deferral of principal payments (*i.e.*, amortization begins after 2025). In our study we examine three concrete interest rate scenarios; a) GLF interest rate (fixed coupon in our case) is reduced to 3-month euribor flat, from 3-month euribor + 50bps, currently; b) GLF interest rate (fixed coupon) is reduced to 25bps fixed; and c) GLF interest rate (fixed coupon) is reduced to 50bps fixed, from 3-month euribor + 50bps, presently. The implications of the above transaction for the general government borrowing need and the gross debt are presented in *Tables A1 & A2* below.

Table A1- Impact of assumed "soft OSI" structure on general government borrowing needs and sources of funding in EUR billions (*minus* sign indicates improvement / *positive* sign indicates deterioration)

GLF facility

20-year maturity extension; interest rate reduction & 10-year deferral of interest payments

	GLF interest rate cut to **25bps fixed**, from 3m-euribor + 50bps currently	GLF interest rate cut to **50bps fixed**, from 3m-euribor + 50bps currently	GLF interest rate cut to **euribor flat**, from 3m-euribor + 50bps currently
2015-2016	-0.5	-0.9	-0.9
2015-2022	-7.6	-7.9	-7.9
2023-2032	-23.1	-21.8	-17.5
2033-2042	-8.7	-7.4	-3.0
2043-2052	14.2	15.1	17.6
2053-2062	13.8	14.4	15.3
2063-2065	2.7	2.8	2.8
Total saving (-)/disaving (+) in 2015-2065	**-8.8**	**-4.8**	**7.2**

Source: EC, IMF, Eurobank Global Markets Research, Bloomberg

[8] http://www.eurobank.gr/Uploads/Reports/GREECE%20Macro%20Monitor%20-%20October%2031%202013.pdf

Table A2- Impact of assumed "soft OSI" structure on the gross public debt ratio ***(calculations assume fulfillment of the troika's baseline scenario as regards future nominal GDP growth, the evolution of the general primary surplus and privatization revenue)***

GLF facility

20-year maturity extension; interest rate reduction & 10-year deferral of interest payments

	2014	2020	2022	2032
Debt (% GDP) - No relief scenario	177.7%	131.0%	120.5%	87.1%
Debt (% GDP) - 20yr maturity extension, 10yr interest diferral & fixed rate 0.25%	177.7%	130.3%	119.4%	83.9%
Debt (% GDP) - 20yr maturity extension, 10yr interest diferral & fixed rate 0.50%	177.7%	130.7%	119.8%	84.8%
Debt (% GDP) - 20yr maturity extension, 10yr interest diferral & euribor flat rate	177.7%	130.3%	119.6%	86.1%

Source: EC, IMF, Eurobank Global Markets Research, Bloomberg

Note on Tables A1 & A2

The "soft OSI" scenarios presented in Tables A1 & A2 assume the swapping of EU bilateral loans (GLF) into a 50-year fixed coupon amortizing bond with 10 year grace period on interest payments. In addition, the relevant structures assume that new debt relief is agreed with official lenders sometime in H1 2015 and it also involves a renewed 10-year deferral of principal payments (*i.e.,* amortization begins after 2025). In our study we examine three concrete interest rate scenarios; a) GLF interest rate (fixed coupon in our case) is reduced to 3-month euribor, from 3-month euribor + 50bps, currently; b) GLF interest rate (fixed coupon) is reduced to 25bps flat; and c) GLF interest rate (fixed coupon) is reduced to 50bps, from 3-month euribor + 50bps, presently. Note also that the euribor rates utilized in the calculations presented herein are implied by the euribor rate futures curve (as of Jan 20, 2015). Furthermore, all other underlying variables are assumed to evolve in line with the troika's baseline macro scenario.

Hard OSI scenarios – 50% write off of EU loans, GLF maturity extension & lower interest rates

In this section, we present a hypothetical restructuring scenario for Greek public debt, which, for purely demonstrative purposes we call *"hard OSI" scenario.* In this scenario we assume a 50% write off of both the GLF facility (€52.9bn) and the package of EFSF loans that have so far been given to Greece in the context of the second bailout program (€141.9bn). Furthermore, this scenario assumes a 20-year extension in the average maturity of GLF loans, a 10-year deferral of respective interest payments and, again, the following three discrete (sub-) scenarios as regards GLF interest costs: a) GLF interest rate is reduced to 3-month euribor flat, from 3-month euribor + 50bps, currently; b) GLF interest rate is reduced to 25bps fixed; and c) GLF interest rate is reduced to 50bps fixed, from 3-month euribor + 50bps, presently. *Tables B1 & B2* below present the estimated impact of these relief packages on Greek public debt and the evolution of the general government borrowing requirement.

Table B1- Impact of assumed "hard OSI" structure on general government borrowing needs and sources of funding in EUR billions (*minus* sign indicates improvement / *positive* sing indicates deterioration)

	50% haircut on both GLF and EFSF loans (1st and 2nd bailout programs)		
	GLF interest rate cut to **25bps fixed**, from 3m-euribor + 50bps currently	GLF interest rate cut to **50bps fixed**, from 3m-euribor + 50bps currently	GLF interest rate cut to **euribor flat**, from 3m-euribor + 50bps currently
2015-2016	-0.6	-0.6	-0.6
2015-2022	-7.9	-7.9	-7.9
2023-2032	-47.9	-47.3	-45.1
2033-2042	-45.4	-44.7	-42.5
2043-2052	-14.7	-14.3	-13.0
2053-2062	4.2	4.5	5.0
2063-2065	1.4	1.4	1.4
Total saving (-)/disaving (+) in 2015-2065	**-110.9**	**-108.8**	**-102.7**

Source: EC, IMF, Eurobank Global Markets Research, Bloomberg

Table B2- Impact of assumed "hard OSI" structure on the gross public debt ratio ***(calculations assume fulfillment of the troika's baseline scenario for future nominal GDP growth, the evolution of the general primary surplus and privatization revenue)***

	50% haircut on both GLF and EFSF loans (1st & 2nd programs)				
	2014	**2015**	**2020**	**2022**	**2032**
No relief scenario	177.7%	174.5%	131.0%	120.5%	87.1%
50% write off of GLF & EFSF loans ***plus*** 20yr maturity extention, 10yr interest differal & fixed rate 0.25% on GLF	177.7%	121.7%	81.1%	70.3%	26.2%
50% write off of GLF & EFSF loans ***plus*** 20yr maturity extention, 10yr interest differal & fixed rate 0.50% on GLF	177.7%	121.7%	81.3%	70.5%	26.6%
50% write off of GLF & EFSF loans ***plus*** 20yr maturity extention, 10yr interest differal & euribor rate flat on GLF	177.7%	121.7%	81.0%	70.4%	27.3%

Source: EC, IMF, Eurobank Global Markets Research, Bloomberg

Note on Tables B1 & B2

The "had OSI" scenarios presented in Tables B1 & B2 assume a 50% write off of both the GLF facility (€52.9bn) and the package of EFSF loans that have so far been given to Greece in the context of the second bailout program (€141.9bn). Furthermore, this scenario assumes a 20-year extension in the average maturity of GLF loans, a 10-year deferral of respective interest payments and, again, the following three discrete (sub-) scenarios as regards GLF interest costs: a) GLF interest rate is reduced to 3-month euribor flat, from 3-month euribor + 50bps, currently; b) GLF interest rate is reduced to 25bps fixed; and c) GLF interest rate is reduced to 50bps fixed, from 3-month euribor + 50bps, presently. Note also that the euribor rates utilized in the calculations presented herein are implied by the euribor rate futures curve (as of Jan 20, 2015). The forecast of the EFSF future funding cost curve is based on a polynomial of 5th degree fit on the current EFSF cost curve. Finally, all other underlying variables are assumed to evolve in line with the troika's baseline macro scenario.

Impact of relaxation of the agreed fiscal targets

This section examines the impact on Greece's public debt ratio of various scenarios assuming debt relief (soft OSI *vs.* hard OSI) and a certain relaxation of the fiscal target. Note that under the present planning, Greece's general government primary balance is expected to reach 3%-of-GDP this year, from c. 1.5%-of-GDP in 2014 and to remain between 4%-of-GDP and 4.5%-of-GDP in the period thereafter. Table C below portrays the evolution of the debt to GDP ratio under some of these scenarios, assuming all other factors to remain constant.

Table C – Evolution of Greece's public debt ratio under various scenarios regarding debt relief and a relaxation of the fiscal target

	No fiscal relaxation		**1ppt** of GDP fiscal relaxation		**2ppts** of GDP fiscal relaxation		**4ppts** of GDP fiscal relaxation	
	2022	**2032**	**2022**	**2032**	**2022**	**2032**	**2022**	**2032**
Baseline - No relief scenario	120.5%	87.1%	128.3%	105.6%	136.0%	124.0%	151.5%	160.9%
Soft OSI snenario - 20yr maturity extension, 10yr interest deferral & cut of interest rate to 0.25% fixed on GLF	119.4%	83.9%	127.1%	102.4%	134.9%	120.8%	150.4%	157.7%
Hard OSI scenario - 50% write off of both GLF & EFSF loans ***plus*** 20yr maturity extension, 10yr interest deferral & cut of interest rate to 0.25% fixed on GLF	75.6%	26.2%	78.1%	44.6%	85.8%	63.1%	101.3%	99.9%

Source: Source: EC, IMF, Eurobank Global Markets Research, Bloomberg

Note on Table C

The scenarios presented in Table C are as follows:

- ***Baseline-no relief scenario:*** involves no debt relief and various assumptions regarding the (annual) relaxation of the agreed fiscal targets i.e., by 0ppts-of-GDP; 1ppt-of-GDP; 2ppts- and 4ppts-of-GDP.
- ***Soft OSI scenario:*** assumes the swapping of EU bilateral loans (GLF) into a 50-year fixed coupon amortizing bond with 10-year grace period on interest payments. In addition, the relevant structure assumes that new debt relief is agreed with official lenders sometime in H1 2015 and it also involves a renewed 10-year deferral of principal payments (*i.e.,* amortization begins after 2025). In this scenario, we also assume that the GLF interest rate (fixed coupon in our case) is reduced to 25bps fixed, from 3-month euribor + 50bps, currently. Finally, the scenario incorporates various assumptions regarding the (annual) relaxation of the agreed fiscal targets i.e., by 0ppts-of-GDP; 1ppt-of-GDP; 2ppts- and 4ppts-of-GDP.
- ***Hard OSI scenario:*** assumes a 50% write off of both the GLF facility (€52.9bn) and the package of EFSF loans that have so far been given to Greece in the context of the second bailout program (€141.9bn). Furthermore, it assumes a 20-year extension in the average maturity of GLF loans, a 10-year deferral of respective interest payments and a cut of the GLF interest cost to 25bps fixed, from 3-month euribor + 50bps, presently.

The euribor rates utilized in the calculations presented herein are implied by the euribor rate futures curve (as of Jan 20, 2015). The forecast of the EFSF future funding cost curve is based on a polynomial of 5th degree fit on the current EFSF cost curve. Finally, all other underlying variables are assumed to evolve in line with the troika's baseline macro scenario.

Concluding remarks

- If we accept that fiscal sustainability primarily relates to the notion of serviceability of public debt, then it can be argued that Greece's public debt is more sustainable now than in the period leading to the global financial upheaval of 2008/2009. Indeed the enormous fiscal effort undertaken over the last 5 years leaves the country's debt ratio in a more sustainable path relative to a range of alternative scenarios assuming no adjustment or a more gradual implementation profile of fiscal consolidation relative to that implemented thus far.
- Under all debt relief scenarios examined in this study, Greece continues to face a significant financing gap in its general government accounts this year and the next.
- Under a no-policy change (i.e., no debt relief) scenario which assumes fulfilment of the agreed targets for the primary surplus and privatization revenue, the financing shortfall stands at c. €21bn in 2015 and at €6.9bn in 2016, according to our estimates. On the other hand, all debt relief scenarios examined herein compress the 2015-2016 financing gap by an amount not much higher than 1bn.
- A soft OSI scenario involving a maturity extension of the loans given to Greece in the context of the 1st bailout program (GLF) as well as a significant reduction of respective interest costs and a deferral of interest payments *would not* significantly improve future debt dynamics. However, such a package would facilitate the serviceability of public debt, by smoothing out the general government borrowing requirement profile on a multi-year basis.
- A significant relaxation of the agreed fiscal targets under both a *no debt relief* and a *soft OSI* scenario would level Greece's debt ratio on an unsustainable path going forward.
- A significant fiscal policy relaxation would be permissive (from a debt sustainability stand-point) only under a scenario involving a steep write off of EU loans provided to Greece under the 1st and the 2nd bailout programs.
- The single most important determinant of debt dynamics going forward is nominal GDP growth. Without a return to a positive and sustainable growth environment, it would be nearly impossible to stabilize debt dynamics on a multi-year basis under all debt relief scenarios examined in this study.

Appendix I

Structure and modalities of EU loans to Greece under the two consecutive bailout programs

Table- Current structure and modalities of EU loans

	Notional amount (EURbn)	Average maturity[1] (# of years)	Grace period on principal (# of years)	Grace period on interest (# of years)	Interest rate
EU bilateral loans (1st program)	52.9	30	10	none	3M euribor + 50bps
EFSF loans	133.5 (by Dec. 2013) 141.9 (by mid-Jan. 2015)	30	10	whole amount excluding a part of €34.5bn in notional amount	6M euribor + spread (bank recap loans)[2] EFSF funding cost + spread (rest of loans)[3]

1/,2/&3/ Additional info on EFSF loan amortization and interest payment profiles can be available upon request
Source: EFSF, Eurobank Global Markets Research

EFSF loans to Greece: structure & modalities

	Disbursement day	Disbursement amount (€ bn)	Cumulative disbursement (€ bn)	Interim maturity before roll-over	Final maturity	Interest rate
I	09/03/2012 (1)	34.5	34.5		24/02/2042 (2)	EFSF Cost + 12bps
II	3/19/2012	5.9	40.4		19/03/2047	EFSF Cost + 0.5bps
III	4/10/2012	3.3	43.7		10/04/2041	EFSF Cost + 0.5bps
IV	4/19/2012	25	68.7		19/04/2046 (3)	6M Euribor + 73bps
V	5/10/2012	4.2	72.9		10/05/2042	EFSF Cost + 0.5bps
VI	6/28/2012	1	73.9		28/06/2040	EFSF Cost + 0.5bps
VII	12/17/2012	7	80.9		17/12/2046 (4)	EFSF Cost + 0.5bps
VIII	12/17/2012	11.3	92.2		17/06/2042 (5)	EFSF Cost + 0.5bps
IX	12/19/2012	16	108.2	2023, 2024, 2025	(6)	6M Euribor + 35.5bps
X	1/31/2013	2	110.2		31/01/2043	EFSF Cost + 0.5bps
XI	2/28/2013	1.4	111.6		28/02/2043	EFSF Cost + 0.5bps
XII	2/28/2013	1.4	113		28/02/2044	EFSF Cost + 0.5bps
XIII	4/29/2013	2.8	115.8		30/04/2032	EFSF Cost + 0.5bps
XIV	5/17/2013	4.2	120		17/05/2043	EFSF Cost + 0.5bps
XV	5/30/2013	7.2	127.2	2024, 2025	(7)	6M Euribor + 34bps
XVI	6/25/2013	3.3	130.5		25/06/2045	EFSF Cost + 0.5bps
XVII	7/31/2013	2.5	133.04		31/07/2048	EFSF Cost + 0.5bps

Source: EFSF, EC, IMF Eurobank Global Markets Research

(1) As a temporary operation, EFSF provided the Eurosystem with bonds amounting to €35 billion as collateral during Greece's selective default period due to the PSI operation. These bonds were returned to the EFSF on 25 July 2012 and were cancelled.
(2) PSI sweetener and accrued interest loan amontizes constantly over 20 years between 2023 and 2042
(3) Loan for bank recapitalization; amortizing between 2034-2039 and 2043-2046
(4) Loan amortizes constantly between 2044-2046
(5) Loan amortizes constantly between 2023-2042
(6) Loan for bank recapitalization; target WAM after roll-over is 38.06 years; before roll-over: 11.06 years
(7) Loan for bank recapitalization; target WAM after roll-over is 39.5 years; before roll-over: 11.5 years
Current WAM assuming final maturity following the roll-over of disbursed portions to final maturity

Eurobank Global Markets Research

Global Markets Research Team

Dr. Platon Monokroussos: *Chief Market Economist*
pmonokrousos@eurobank.gr, + 30 210 37 18 903

Paraskevi Petropoulou: *G10 Markets Analyst*
ppetropoulou@eurobank.gr, + 30 210 37 18 991

Galatia Phoka: *Emerging Markets Analyst*
gphoka@eurobank.gr, , + 30 210 37 18 922

Anna Dimitriadou: *Economist*
andimitriadou@eurobank.gr, + 30 210 37 18 793

Global Markets Sales

Nikos Laios: *Head of Treasury Sales*
nlaios@eurobank.gr, + 30 210 37 18 910

Alexandra Papathanasiou: *Head of Institutional Sales*
apapathanasiou@eurobank.gr, +30 210 37 18 996

John Seimenis: *Head of Corporate Sales*
yseimenis@eurobank.gr, +30 210 37 18 909

Achilleas Stogioglou: *Head of Private Banking Sales*
astogioglou@eurobank.gr, +30 210 37 18 904

George Petrogiannis: *Head of Shipping Sales*
gpetrogiannis@eurobank.gr, +30 210 37 18 915

Vassilis Gioulbaxiotis: *Head International Sales*
vgioulbaxiotis@eurobank.gr, +30 210 3718995

Eurobank Ergasias S.A, 8 Othonos Str, 105 57 Athens, tel: +30 210 33 37 000, fax: +30 210 33 37 190, email: EurobankGlobalMarketsResearch@eurobank.gr

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