

Greek Debt Sustainably and Official Crisis-Lending

Online Appendix

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1. Varying discount rates

Table A1: Alternative discount rates

Debt	Nominal	Uniform 5%	German yield curve	Greek yield curve
Bank of Greece	4.8	3.8	4.8	2.6
EFSF	131.0	51.4	117.8	20.1
ESCB	23.6	24.2	28.4	19.1
Euro gov'ts	52.9	33.2	57.6	15.8
Holdouts	2.8	2.9	3.4	2.5
IMF	19.5	18.6	21.9	14.5
PSI Bonds	30.5	26.8	44.7	14.0
T-Bills	14.8	14.6	14.8	14.7
Total	280.1	175.6	293.3	103.2
of GDP	156%	98%	164%	58%

2. Present discounted value computation for France and Italy

Table A2: Marketable debt composition France and Italy

Debt	Face value (Bn EUR)	Interest (Bn EUR) 1/	Present value (Bn EUR)	Difference PV/FV
<i>France 1/</i>				
T-Bills	155.9	-	153.9	1.2%
Bonds	1,429.0	424.8	1,331.3	6.8%
Total of GDP	1,585 74%		1,485 69%	6.3%
<i>Italy 2/</i>				
T-Bills /2	136.3	-	134.1	1.6%
Bonds /3	1,742.5	535.5	1,691.1	2.9%
Total of GDP	1,879 116%		1,825 113%	2.9%

1/ Assuming HICP inflation rate of 2% and setting floating interest rate benchmarks to Euro-average (1999-2015).

2/ Bills: BTFs. Bonds: OATs, BTANs.

3/ Bills: BOTs. Bonds: BTPs, CCTs, EMTN, Eurobonds, Global bonds, ISPA OBBL.

3. Data construction

i. Data sources

- All data comes from *primary sources*:

T-Bills	Greek Public Debt Management Agency (PDMA)
Bonds	Zettelmeyer et al. (2013), Ministry of Finance
ECB & NCB Bonds	Zettelmeyer/Trebesch (2013)
IMF	IMF
EFSF	EFSF
Greek loan facility	Parliament of the Republic of Ireland
Bank of Greece	Bank of Greece Annual Accounts

ii. Missing Data

- We include all data for which we can confirm the repayment schedule from reliable (i.e. primary) sources, but we *lack some data* relative to the headline figure that are included in a recent PDMA (2015) report:

Short-term loans (repos)	10,286,954,529
EIB	7,094,520,535
"Other foreign loans"	5,081,086,468
Total	22,462,561,532

iii. Debt profile

- *Principal repayments.* Repayment schedules as laid out in the primary sources.
 - o Exception: Bank of Greece loan. This dates back to the bundling of various loans by the Bank of Greece to the Government of Greece pre-Maastricht. As monetary financing is prohibited by Euro area member states, the Bank of Greece bundled these obligations into one large loan prior to the accession to the Euro area. Since 2001, the average annual repayment has been ca. EUR 500m, and there are still ca. EUR 4,830m outstanding. Hence we assume a linear repayment path over the coming ten years.
- *Interest payments.*
 - o T-Bills: zero coupons.
 - o Bonds (PSI): step-up coupons (between 3% and 4.3%) according to bond documentation.
 - o Bonds (ECB): fixed coupons.
 - o IMF: GRA charges, SDR charges, SDR assessments. Effective interest ca. 3.6%.
 - o EFSF: Cost of funding + service fee + commitment fee. Average EFSF cost of funding over the term of the 2nd program 1.2%-1.3%. We thus assume an interest rate incl. fees of 1.3%.
 - o GLF: Euribor 3m + 50bps margin. The average Euribor 3m rate since the 2002 (EUR introduction) is about 1.8%, hence we assume an interest rate of about 2.3%
 - o Bank of Greece: zero coupons.

iv. The 3rd (ESM) program

- Terms according to ESM fact sheet:
 - o Total volume: 86bn
 - o Paid out in three tranches 2015, 16, 17
 - o Interest due from the start of the programme (no grace period, as in GLF and EFSF)
 - o Repayment from 2034-2059
 - o We assume ESM interest rate 1.3% (as EFSF)

- IMF

- We assume that the IMF takes a share of 9.6%, in line with the share of IMF/European outstanding commitments at the time the program is negotiated.
- We assume 5 year repayment schedule between 2017-21.
- We assume interest rate 3.7% (=basic rate of charge + EFF surcharge + surcharge for excess quota + service charge).