Leibniz-Institut für Wirtschaftsforschung Halle

INTEREST BENEFITS FROM THE DEBT CRISIS TO THE GERMAN BUDGET

UPDATED CALCULATIONS

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INTEREST BENEFITS FROM THE DEBT CRISIS TO THE GERMAN BUDGET: UPDATED CALCULATIONS

Reint E. Gropp, Oliver Holtemöller

In a recent IWH online note, the IWH suggested that due to “flight to safety” effects, Germany was able to issue government debt at lower rates than otherwise would have been possible. The total savings was calculated to be around Euro 100 billion or about 3 percent of German GDP. “Flight to safety” effects arise from investors shifting their portfolio in the direction of safe assets in times of crisis. In the previous note[1], we document these effects in detail using individual events for the Greek debt crisis during 2014/2015 and simulate the savings based on a simple counterfactual simulation for German government bond yields. This note provides further evidence on the interest savings to the German budget that extend the calculations in two dimensions:

1. The flight to safety effects are more cleanly delineated from effects that arise from the low interest environment more generally.
2. The counterfactual interest simulations permit a daily bond-by-bond calculation of the interest savings.

Using this refined methodology, we obtain interest savings to the German budget of just under Euro 90 billion.

The new counterfactual interest simulation for German bunds starts with the pre-debt crisis interest rate level. It then defines a path based on the following decision rule: If Greek, Spanish and Portuguese yields move opposite to German yields, the simulated yields move with the change in German rates. If Greek, Spanish and Portuguese spreads move in the same direction as German yields, the simulated yields are unchanged. The idea is that if the yields of crisis countries and the yields of German bunds move in the same direction, this cannot be attributed to a flight to safety effect, but rather to the common monetary policy or other factors. If yields of crisis countries and German yields move in opposite directions, this cannot be attributed to the common monetary policy, but rather reflects flight to safety effects. Indeed, in most cases, dates with opposite movements in yields of crisis countries and German yields can be linked back to underlying crisis events. This exercise was performed for bonds of 1-year, 2-year, 5-year and 10-year maturity separately, yielding four different counterfactual interest rate paths that exclusively reflect flight to safety effects and not the low interest rate environment more generally. The resulting simulated path for German government bond yields for the different maturities is given in Figure 1.

In order to calculate the interest savings, we then proceed to use the actual bond issues from the Bundesfinanzagentur (the agency that issues central government debt in Germany).[2] The Bundes-

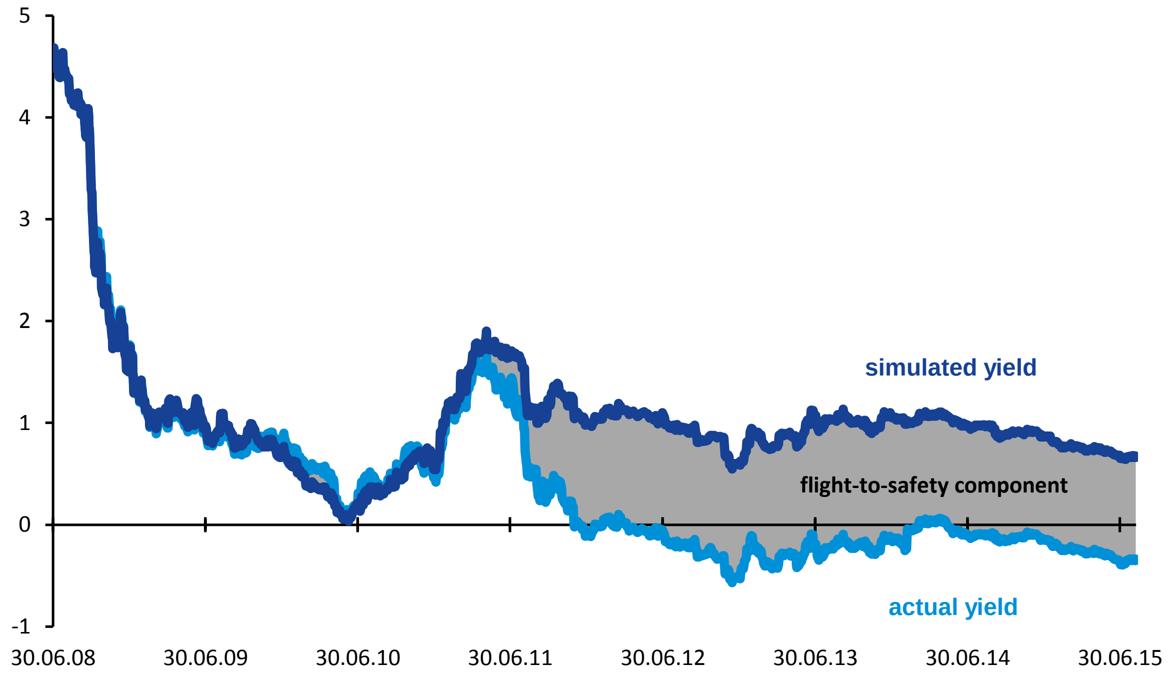
[1] *Leibniz-Institut für Wirtschaftsforschung Halle (IWH) (Hrsg.):* Germany’s Benefit from the Greek Crisis. IWH Online 7/2015. Halle (Saale) 2015.
[2] See http://www.deutsche-finanzagentur.de/de/private-anleger/bundeswertpapiere/bundesanleihen/.

finanzagentur publishes detailed information on the date of issuance, the effective yield of the bond, the time to maturity and other pertinent information. For each bond, we calculated the difference between the actual yield upon issuance and the simulated yield from the calculation described above. These savings were then summed over the duration of the bond. An example for such a calculation for the year 2012 is given in the Table.

Summing up these savings for each individual bond yields a total interest savings through July 2015 of just under Euro 90 billion.

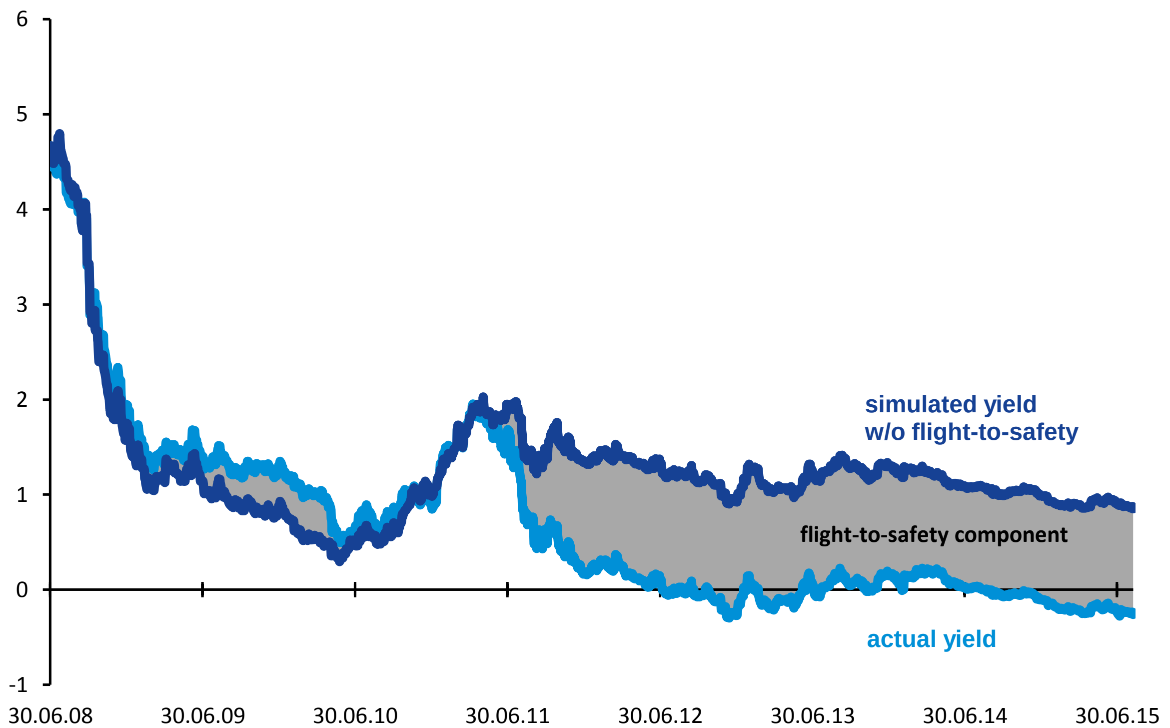
Figures

Figure 1:
Yield to Maturity of 1-Year German Government Bonds
per percent



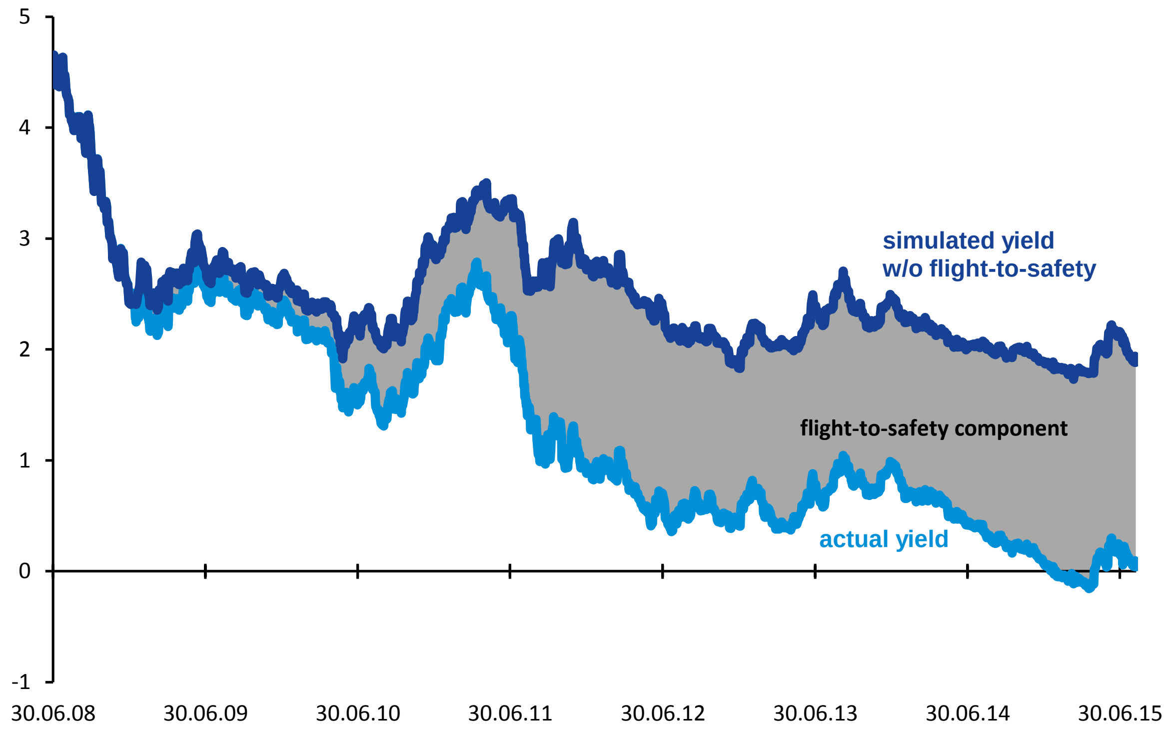
Source: Thomson Reuters Datastream; own calculations.

Figure 2:
Yield to Maturity of 2-Year German Government Bonds
per percent



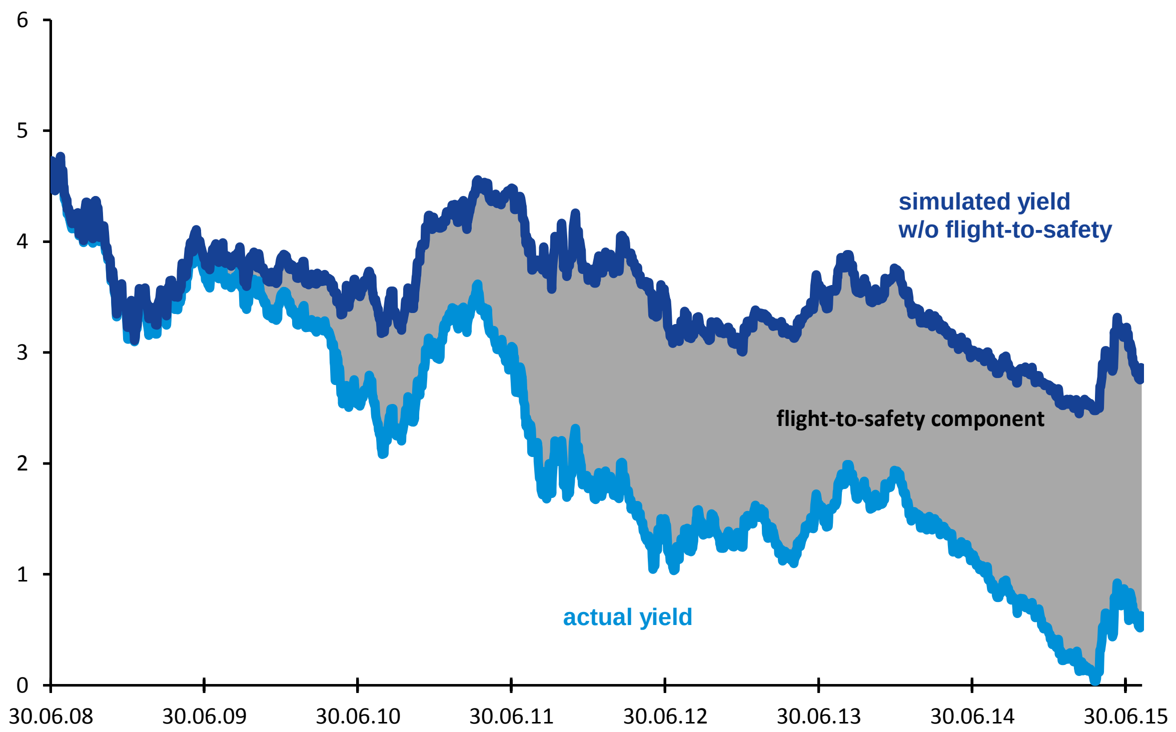
Source: Thomson Reuters Datastream; own calculations.

Figure 3:
Yield to Maturity of 5-Year German Government Bonds
per percent



Source: Thomson Reuters Datastream; own calculations.

Figure 4:
Yield to Maturity of 5-Year German Government Bonds
per percent



Source: Thomson Reuters Datastream; own calculations.

Table

date	maturity	volume in Million Euro	flight-to-safety-effects in percentage points	savings in Million Euro
04.01.2012	10	4.057,00	-1,8807	763,00
09.01.2012	0,5	3.900,00	-1,0886	21,23
11.01.2012	5	3.153,30	-1,8355	289,39
18.01.2012	2	3.439,60	-1,1397	78,40
23.01.2012	1	2.540,00	-1,0566	26,84
25.01.2012	30	2.458,00	-1,9523	1.439,63
01.02.2012	10	4.092,85	-1,9734	807,68
08.02.2012	5	3.292,80	-1,8156	298,92
13.02.2012	0,5	3.010,00	-1,0542	15,87
22.02.2012	2	4.282,00	-1,1594	99,29
27.02.2012	1	2.545,00	-1,0686	27,20
29.02.2012	10	3.258,20	-2,0002	651,71
07.03.2012	5	3.312,00	-1,7752	293,97
12.03.2012	0,5	3.493,00	-1,0916	19,06
21.03.2012	2	4.108,00	-1,1594	95,26
21.03.2012	10	1.398,00	-2,0462	286,06
26.03.2012	1	2.730,00	-1,1086	30,26
02.04.2012	0,5	3.270,00	-1,1086	18,13
04.04.2012	5	3.366,65	-1,7446	293,67
11.04.2012	10	3.870,00	-2,2247	860,96
18.04.2012	2	4.206,00	-1,2249	103,04
23.04.2012	1	1.960,00	-1,1381	22,31
25.04.2012	30	2.405,40	-2,1461	1.548,67
09.04.2012	5	4.032,00	-1,8086	364,61
14.05.2012	0,5	3.300,00	-1,1585	19,12
16.05.2012	10	4.106,85	-2,2859	938,78
21.05.2012	1	2.910,00	-1,1591	33,73
23.05.2012	2	4.555,00	-1,2307	112,12
23.05.2012	10	1.291,00	-2,2859	295,11
06.06.2012	5	3.977,50	-1,776	353,20
11.06.2012	0,5	3.530,00	-1,1006	19,43
13.06.2012	5	770,00	-1,7372	66,88
13.06.2012	10	4.042,00	-2,1062	851,33
20.06.2012	2	4.005,00	-1,2127	97,14
25.06.2012	1	2.045,00	-1,1486	23,49
04.07.2012	5	3.293,70	-1,7194	283,16
09.07.2012	0,5	3.290,00	-1,1498	18,91
11.07.2012	10	4.152,85	-2,0211	839,33
18.07.2012	2	4.173,00	-1,2284	102,52
23.07.2012	1	2.703,00	-1,1441	30,93
25.07.2012	10	752,00	-2,0677	155,49
25.07.2012	30	2.322,00	-2,0677	1.440,36
01.08.2012	5	3.354,40	-1,6898	283,41
08.08.2012	10	3.399,80	-1,966	668,40
13.08.2012	0,5	3.770,00	-1,1441	21,57
22.08.2012	2	4.082,50	-1,2134	99,07
27.08.2012	1	1.975,00	-1,1315	22,35
05.09.2012	10	3.610,00	-1,8571	670,41
10.09.2012	0,5	3.400,00	-1,1239	19,11
12.09.2012	5	3.972,00	-1,4851	294,94
12.09.2012	10	578,00	-1,7396	100,55
19.09.2012	2	4.084,40	-1,2178	99,48
24.09.2012	1	1.172,50	-1,1239	13,18
26.09.2012	10	3.191,00	-1,8272	583,06
08.10.2012	0,5	2.420,00	-1,1154	13,50
10.10.2012	5	3.112,40	-1,5115	235,22
10.10.2012	10	1.170,00	-1,7436	204,00

date	maturity	volume in Million Euro	flight-to-safety-effects in percentage points	savings in Million Euro
17.10.2012	2	4.189,00	-1,1934	99,98
24.10.2012	10	3.329,00	-1,788	595,23
29.10.2012	1	1.920,00	-1,1596	22,26
31.10.2012	30	1.704,10	-1,8936	968,07
07.11.2012	5	3.290,40	-1,5836	260,53
12.11.2012	0,5	3.520,00	-1,1914	20,97
14.11.2012	2	4.322,60	-1,226	105,99
21.11.2012	5	845,00	-1,5514	65,55
21.11.2012	10	3.253,20	-1,8609	605,39
26.11.2012	1	2.730,00	-1,1623	31,73
28.11.2012	5	2.506,80	-1,5263	191,31
03.12.2012	0,5	2.587,00	-1,1242	14,54
05.12.2012	2	3.311,50	-1,1989	79,40

Sources: German Federal Statistical Office and Federal Financing Agency (Finanzagentur der Bundes GmbH); own calculations.

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